REVIEWER NOTES

1) UTILITY RELOCATION IS NOT ANTICIPATED TO BE NECESSARY ON THIS PROJECT

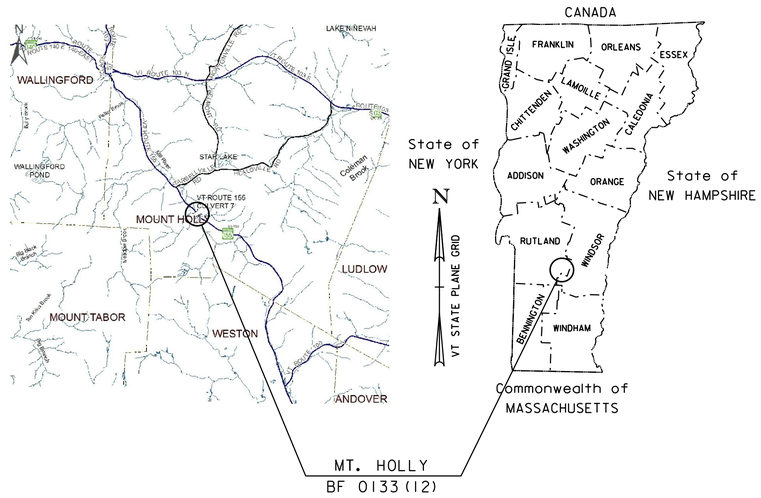
2) RIGHT-OF-WAY IS ANTICIPATED TO BE NECESSARY FOR THIS PROJECT AS THE INLET AND OUTLET OF THE STRUCTURE ALREADY OUTSIDE THE STATE RIGHT-OF-WAY.

3) TRAFFIC CONTROL IS A 28 DAY CLOSURE WITH AN OFF SITE DETOUR, USING VT ROUTE 100 AND VT ROUTE 103.

4) THERE IS AN EXISTING DRY HYDRANT AT THE OUTLET OF THE CULVERT. THE DRY HYDRANT WILL REMAIN IN PLACE THROUGH CONSTRUCTION.

5) THERE IS AN EXISTING BURIED TELEPHONE CABLE TO THE WEST OF THE ROAD. IT IS IN THE PROCESS OF BEING DECOMMISSIONED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF MT. HOLLY

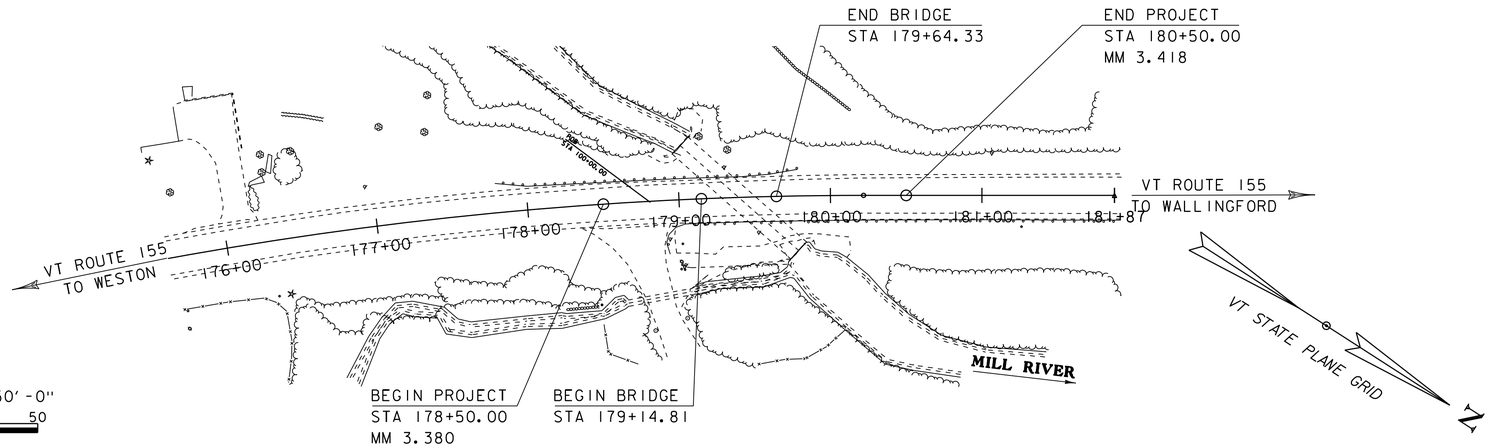
COUNTY OF RUTLAND

ROUTE NO : VT ROUTE 155 BRIDGE NO : 7

PROJECT LOCATION : APPROXIMATELY 5.8 MILES NORTH OF THE JUNCTION BETWEEN VT ROUTE 100 AND VT ROUTE 155

PROJECT DESCRIPTION : REMOVAL OF EXISTING CULVERT, AND REPLACEMENT WITH A NEW OPEN BOTTOMED BURIED STRUCTURE.

LENGTH OF STRUCTURE:	49.52	FEET.
LENGTH OF ROADWAY:	150.48	FEET.
LENGTH OF PROJECT:	200.00	FEET.



SCALE 1" = 50'-0"
50 0 50

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY :	H. MCGOWAN
SURVEYED DATE :	12-22-2015
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (2011)

PRELIMINARY PLANS
09-NOV-2018

DIRECTOR OF PROJECT DELIVERY

APPROVED _____ DATE _____

PROJECT MANAGER : ROB YOUNG P.E.

PROJECT NAME : MT. HOLLY
PROJECT NUMBER : BF 0133(12)

SHEET 1 OF 25 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (CULVERT)

Version
LRFD

INDEX OF SHEETS

PLAN SHEETS

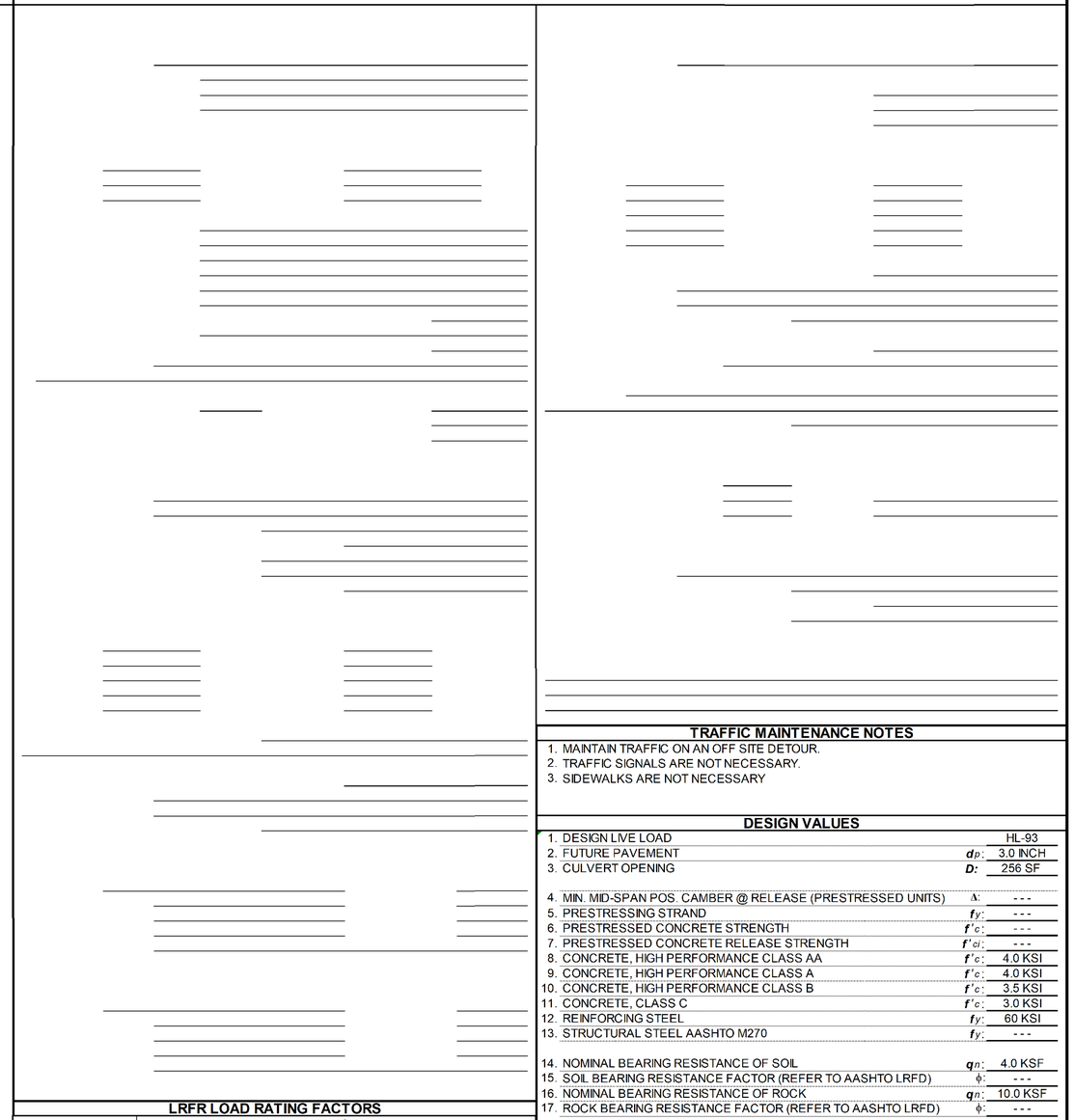
STANDARDS LIST

B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	03-10-2017
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	03-10-2017
J-3	MAIL BOX SUPPORT DETAILS	08-07-1995
T-1	TRAFFIC CONTROL GENERAL NOTES	04-25-2016
T-2	TRAFFIC SIGN GENERAL NOTES	04-25-2016
T-40	DELINEATORS AND MILEPOSTS	01-02-2013
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013
T-56	STANDARD SIGN PLACEMENT	10-26-2015

DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012
SD-502.00	CONCRETE DETAILS AND NOTES	10/10/2012

FINAL HYDRAULIC REPORT



TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_P:	3.0 INCH
3. CULVERT OPENING	D:	256 SF
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5. PRESTRESSING STRAND	f_y:	---
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	4.0 KSI
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11. CONCRETE, CLASS C	f'_c:	3.0 KSI
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y:	---
14. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	4.0 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
16. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	10.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
18. PILE RESISTANCE FACTOR	ϕ:	---
19. LATERAL PILE DEFLECTION	Δ:	---
20. BASIC WIND SPEED	V_{3s}:	---
21. MINIMUM GROUND SNOW LOAD	p_g:	---
22. SEISMIC DATA — PGA: ---	S_s:	---
	S_1:	---
23.		
24.		---
25.		---
26.		---

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY							
POSTING							
OPERATING							
COMMENTS:	TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER						

CULVERT DESIGN CRITERIA

1. PROPOSED CULVERT IS A PRESTRESS CONCRETE STRUCTURE (32'-0" X 8'-0" X 65'-0" BOX).
2. CULVERT ENDS ARE SKEWED BY AN ANGLE OF VARIES°
3. CULVERT WILL BE SET AT A SLOPE OF 23.16 IN. ON 100 FT.
4. CULVERT WILL NOT REQUIRE FISH PASSAGE ACCOMODATIONS
5. CULVERT CONSTRUCTION MAY REQUIRE A TEMPORARY PIPE

TRAFFIC DATA

YEAR	ADT	DHV	%D	%T	ADTT
2018	570	65	54	2	25
2038	580	65	54	3.1	40

20 year ESAL for flexible pavement from 2018 to 2038 : 113000

40 year ESAL for flexible pavement from 2018 to 2058 : 254000

Design Speed : 50 mph

AS BUILT "REBAR" DETAIL

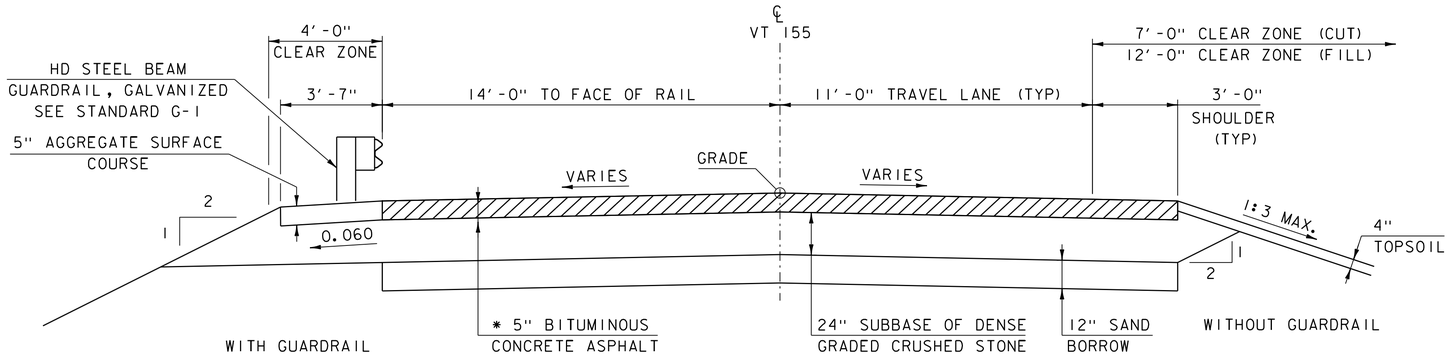
LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

PROJECT NAME: **MT. HOLLY**

PROJECT NUMBER: **BF 0133(12)**

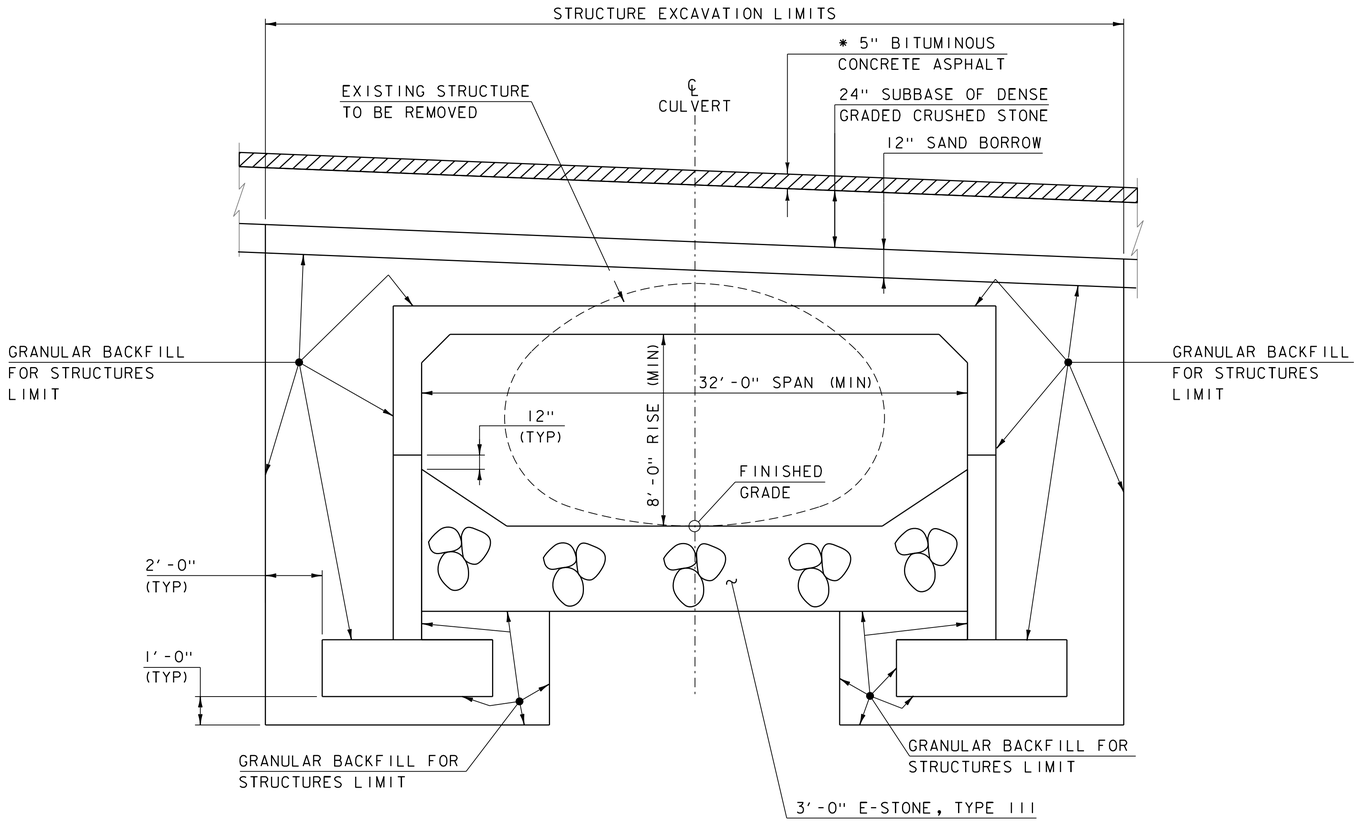
FILE NAME: **12c594/s12c594forms.dgn**
PROJECT LEADER: **R.YOUNG**
DESIGNED BY: **C.COTE**
PRELIMINARY INFORMATION SHEET

PLOT DATE: 11/9/2018
DRAWN BY: **D.D.BEARD**
CHECKED BY: **C.MOONEY**



PROPOSED VT 100 TYPICAL SECTION

SCALE 3/8" = 1'-0"



PROPOSED TYPICAL SECTION

NOT TO SCALE

* BITUMINOUS CONCRETE ASPHALT MATERIAL SECTION

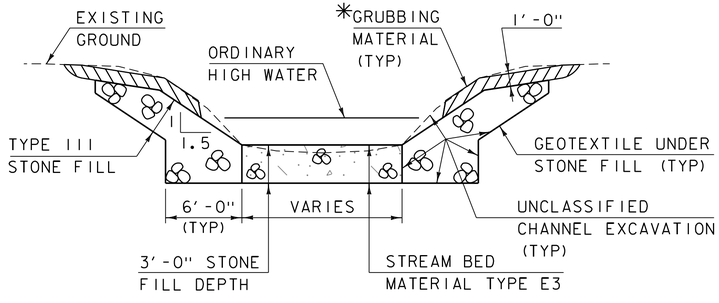
VT-155
1½" TYPE IVS OVER
1½" TYPE IVS OVER
2" TYPE IIIS

MATERIAL TOLERANCES

(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- ¼"
- AGGREGATE SURFACE COURSE	+/- ½"
SUBBASE	+/- 1"
SAND BORROWS	+/- 1"

✳ WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



CHANNEL TYPICAL SECTION

NOT TO SCALE

PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)
FILE NAME: sl2b594typ.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: D.D.BEARD
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
TYPICAL SECTIONS	SHEET 3 OF 25

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	R.T.& I.	RIGHT, TITLE, AND INTEREST
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
⊡	BNDNS	BOUND TO BE SET
◎	IPNF	IRON PIN FOUND
●	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
	APL	BOUND APPARENT LOCATION
	BM	BENCHMARK
	BND	BOUND
	CB	CATCH BASIN
	COMB	COMBINATION POLE
	DITHR	DROP INLET THROATED DNC
	EL	ELECTRIC POWER POLE
	FPOLE	FLAGPOLE
	GASFIL	GAS FILLER
	GP	GUIDE POST
	GSO	GAS SHUT OFF
	GUY	GUY POLE
	GUYW	GUY WIRE
	GV	GATE VALVE
	H	TREE HARDWOOD
	HCTRL	CONTROL HORIZONTAL
	HVCTRL	CONTROL HORIZ. & VERTICAL
	HYD	HYDRANT
	IP	IRON PIN
	IPIPE	IRON PIPE
	LI	LIGHT - STREET OR YARD
	MB	MAILBOX
	MH	MANHOLE (MH)
	MM	MILE MARKER
	PM	PARKING METER
	PMK	PROJECT MARKER
	POST	POST STONE/WOOD
	RRSIG	RAILROAD SIGNAL
	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
	SAT	SATELLITE DISH
	SHRUB	SHRUB
	SIGN	SIGN
	STUMP	STUMP
	TEL	TELEPHONE POLE
	TIE	TIE
	TSIGN	SIGN W/DOUBLE POST
	VCTRL	CONTROL VERTICAL
	WELL	WELL
	WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADIUS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE
CB	CHORD BEARING

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

- UGU — UTILITY (GENERIC-UNKNOWN)
- UT — TELEPHONE
- UE — ELECTRIC
- UC — CABLE (TV)
- UEC — ELECTRIC+CABLE
- UET — ELECTRIC+TELEPHONE
- UCT — CABLE+TELEPHONE
- UECT — ELECTRIC+CABLE+TELEPHONE
- G — GAS LINE
- W — WATER LINE
- S — SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

- AGU — UTILITY (GENERIC-UNKNOWN)
- T — TELEPHONE
- E — ELECTRIC
- C — CABLE (TV)
- EC — ELECTRIC+CABLE
- ET — ELECTRIC+TELEPHONE
- AER E&T — ELECTRIC+TELEPHONE
- CT — CABLE+TELEPHONE
- ECT — ELECTRIC+CABLE+TELEPHONE
- UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

- TOP OF CUT SLOPE
- TOE OF FILL SLOPE
- STONE FILL
- BOTTOM OF DITCH ℄
- CULVERT PROPOSED
- STRUCTURE SUBSURFACE
- PDF — PROJECT DEMARCATION FENCE
- BF — BARRIER FENCE
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

- TOWN LINE — TOWN BOUNDARY LINE
- COUNTY LINE — COUNTY BOUNDARY LINE
- STATE LINE — STATE BOUNDARY LINE
- PROPOSED STATE R.O.W. (LIMITED ACCESS)
- PROPOSED STATE R.O.W.
- STATE ROW (LIMITED ACCESS)
- STATE ROW
- TOWN ROW
- PERMANENT EASEMENT LINE (P)
- TEMPORARY EASEMENT LINE (T)
- SURVEY LINE
- P/L — PROPERTY LINE (P/L)
- SR SR SR — SLOPE RIGHTS
- 6f — 6F PROPERTY BOUNDARY
- 4f — 4F PROPERTY BOUNDARY
- HAZ — HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

- FILTER CURTAIN
- SILT FENCE
- SILT FENCE WOVEN WIRE
- CHECK DAM
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

- WETLAND BOUNDARY
- RIPARIAN BUFFER ZONE
- WETLAND BUFFER ZONE
- SOIL TYPE BOUNDARY
- T&E — THREATENED & ENDANGERED SPECIES
- HAZ — HAZ — HAZARDOUS WASTE AREA
- AG — AGRICULTURAL LAND
- HABITAT — FISH & WILDLIFE HABITAT
- FLOOD PLAIN — FLOOD PLAIN
- OHW — ORDINARY HIGH WATER (OHW)
- STORM WATER
- USDA FOREST SERVICE LANDS
- WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- (H) HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

- ROAD EDGE PAVEMENT
- ROAD EDGE GRAVEL
- DRIVEWAY EDGE
- DITCH
- FOUNDATION
- FENCE (EXISTING)
- FENCE WOOD POST
- FENCE STEEL POST
- GARDEN
- ROAD GUARDRAIL
- RAILROAD TRACKS
- CULVERT (EXISTING)
- STONE WALL
- WALL
- WOOD LINE
- BRUSH LINE
- HEDGE
- BODY OF WATER EDGE
- LEDGE EXPOSED

PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2c594forms.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
SYMBOLOGY LEGEND

PLOT DATE: 09-NOV-2018
DRAWN BY: M.LONGSTREET
CHECKED BY: C.MOONEY
SHEET 4 OF 25

CONTROL POINTS

HVCTRL #1

SANDY
NORTH = 325689.4990
EAST = 1555757.1140
ELEV. = 1733.1650

GENERAL LOCATION, MOUNT HOLLY, VT.

TO REACH FROM THE INTERSECTION OF VT ROUTE 155 AND VT ROUTE 140 IN EAST WALLINGFORD, GO SOUTHEAST ALONG VT ROUTE 155 FOR 5.1 MI (8.2 KM) TO THE INTERSECTION OF DANA LANE (PRIVATE) RIGHT AND THE SITE OF THE MARK ON THE RIGHT.

THE MARK IS SET 35 CM (14 INCHES) BELOW GROUND SURFACE IN THE TOP OF A 30 CM (12 INCH) DIAMETER CONCRETE MONUMENT. IT IS 11.0 M (36.1 FT) SOUTHWEST OF AND 1.0 M (3.3 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 155, 9.5 M (31.2 FT) SOUTHEAST OF THE CENTERLINE OF DANA LANE, 4.3 M (14.1 FT) NORTHEAST OF POLE NO 1/106-4/2-4-9-29, 37.9 M (124.3 FT) NORTHEAST OF THE EAST CORNER OF HOUSE NO 44, 14.9 M (48.9 FT) SOUTHEAST OF THE MOST SOUTHEASTERLY WOODEN POST IN A ROW AND 0.3 M (1.0 FT) NORTHEAST OF A FIBERGLASS WITNESS POST.

HVCTRL #2

SANDY AZ MK
NORTH = 326774.3220
EAST = 1554102.2470
ELEV. = 1692.9590

GENERAL LOCATION, MOUNT HOLLY, VT.

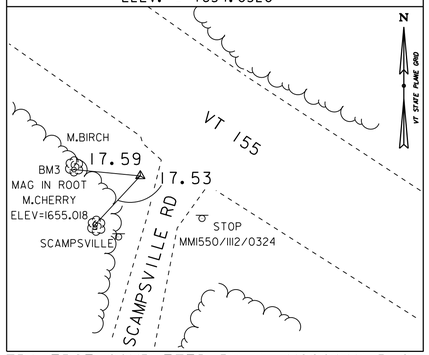
TO REACH FROM THE INTERSECTION OF VT ROUTE 155 AND VT ROUTE 140 IN EAST WALLINGFORD, GO SOUTHEAST ALONG VT ROUTE 155 FOR 4.7 MI (7.6 KM) TO THE SITE OF THE MARK ON THE RIGHT, ABOUT 0.1 MI (0.2 KM) NORTHWEST OF MAPLE HILL ROAD.

THE MARK IS SET 10 CM (4 INCHES) BELOW GROUND SURFACE IN THE TOP OF A FENO STYLE MONUMENT. IT IS 12.1 M (39.7 FT) SOUTHWEST OF AND LEVEL WITH THE CENTERLINE OF VT ROUTE 155, 24.0 M (78.7 FT) EAST OF AND ACROSS THE ROAD FROM THE CENTER OF THE NORTHWEST (OUTLET) END OF A 45 CM (18 INCH) METAL DRIVE CULVERT, 50.2 M (164.7 FT) SOUTHEAST OF AND ACROSS THE ROAD FROM THE SOUTHWEST END OF A GATED GRAVEL DRIVE AND 72.9 M (239.2 FT) NORTHWEST OF THE CENTER OF THE SOUTHWEST (INLET) END OF A 30 CM (12 INCH) DIAMETER CONCRETE CULVERT WITH HEADWALL AND STEEL MARKER POST.

TRAVERSE TIES

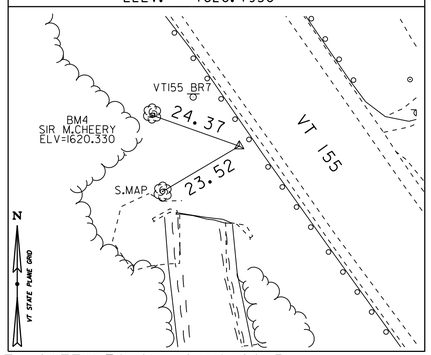
HVCTRL 3

NORTH = 327238.4798
EAST = 1553331.7014
ELEV. = 1654.0320



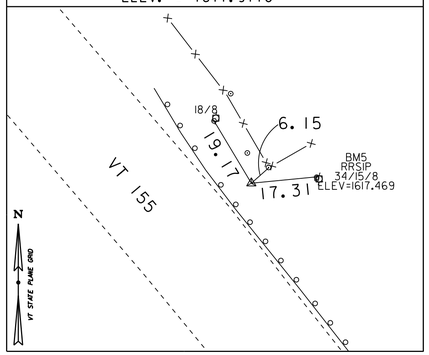
HVCTRL 4

NORTH = 327825.9086
EAST = 1552756.7522
ELEV. = 1620.1930



HVCTRL 5

NORTH = 328402.1807
EAST = 1552415.1462
ELEV. = 1617.9770



_____

NORTH = _____
EAST = _____
ELEV. = _____

_____

NORTH = _____
EAST = _____
ELEV. = _____

TRAVERSE COMPLETED BY H. MCGOWAN P.C. & T. CATTANEO ON 12/18/2015

ALIGNMENT TIES

_____

NORTH = _____
EAST = _____
ELEV. = _____

_____

NORTH = _____
EAST = _____
ELEV. = _____

_____

NORTH = _____
EAST = _____
ELEV. = _____

_____

NORTH = _____
EAST = _____
ELEV. = _____

_____

NORTH = _____
EAST = _____
ELEV. = _____

DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83 (2011)
ADJUSTMENT COMPASS

PROJECT NAME: MT HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2b594tie.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: H. MCGOWAN
TIE SHEET

PLOT DATE: 09-NOV-2018
DRAWN BY: H. MCGOWAN
CHECKED BY: C.MOONEY
SHEET 5 OF 25


VT STATE PLANE GRID
N
SOIL INFORMATION:
PERU GRAVELLY SAND
K-FACTOR= .37
HYDROLOGICAL SOIL GROUP:C
PAQUETTE, BRUCE & MARIE
N/F
RICCIO, DEBRA
PI STA 181+07.89
EXISTING R.O.W.
179+48
180+00
181+00
182+00
182+68
23+50
23+00
22+00
21+00
20+50
GUY WIRE
COMB 6 3-9-11
GUY WIRE
COMB 6X 3-9-10
GRAVEL DRIVE
EXISTING R.O.W.
N/F
BURGESS, EDWARD
AND
BEAUDREAU, CHRISTINE
BARBED WIRE FENCE
WETLAND BUFFER
BARBED WIRE FENCE
MUMBER,
RICHARD A. & DARLENE T.
BARBED WIRE FENCE
SOIL INFORMATION:
SHEEPSCOT FINE SANDY LOAM
K-FACTOR= .24
HYDROLOGICAL SOIL GROUP:B
BUCK, GREGORY J.
1630
1620
1610

EPSC EXISTING CONDITIONS

SCALE 1" = 20'-0"
20 0 20

PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: s12c594epsc.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
EPSC EXISTING CONDITIONS

PLOT DATE: 09-NOV-2018
DRAWN BY: D.D.BEARD
CHECKED BY: C.MOONEY
SHEET 6 OF 25

COLD PLANE
STA 179+50 - 180+00
STA 182+00 - 182+50

CONSTRUCT DRIVE
STA 179+86 RT - 180+67 RT

4" YELLOW LINE (DOUBLE)
STA 179+48 - 182+50

4" WHITE LINE
STA 179+48 - 182+50 LT
STA 179+48 - 182+50 RT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 179+38 LT - 181+38 LT
STA 180+50 RT - 182+50 RT

MANUFACTURED TERMINAL SECTION
(FOR HDSB GUARDRAIL)
STA 181+75 - 181+25 LT

HDSB GUARDRAIL
STA 179+48 LT - 181+75 LT
STA 180+50 RT - 182+50 RT

REMOVING SIGNS
STA 180+54 RT (1)
STA 180+64 RT (1)
STA 180+89 LT (1)
STA 181+12 RT (1)

TRAFFIC SIGN, TYPE A
STA 180+54 RT (1)
STA 180+64 RT (1)
STA 180+89 LT (1)
STA 181+12 RT (1)

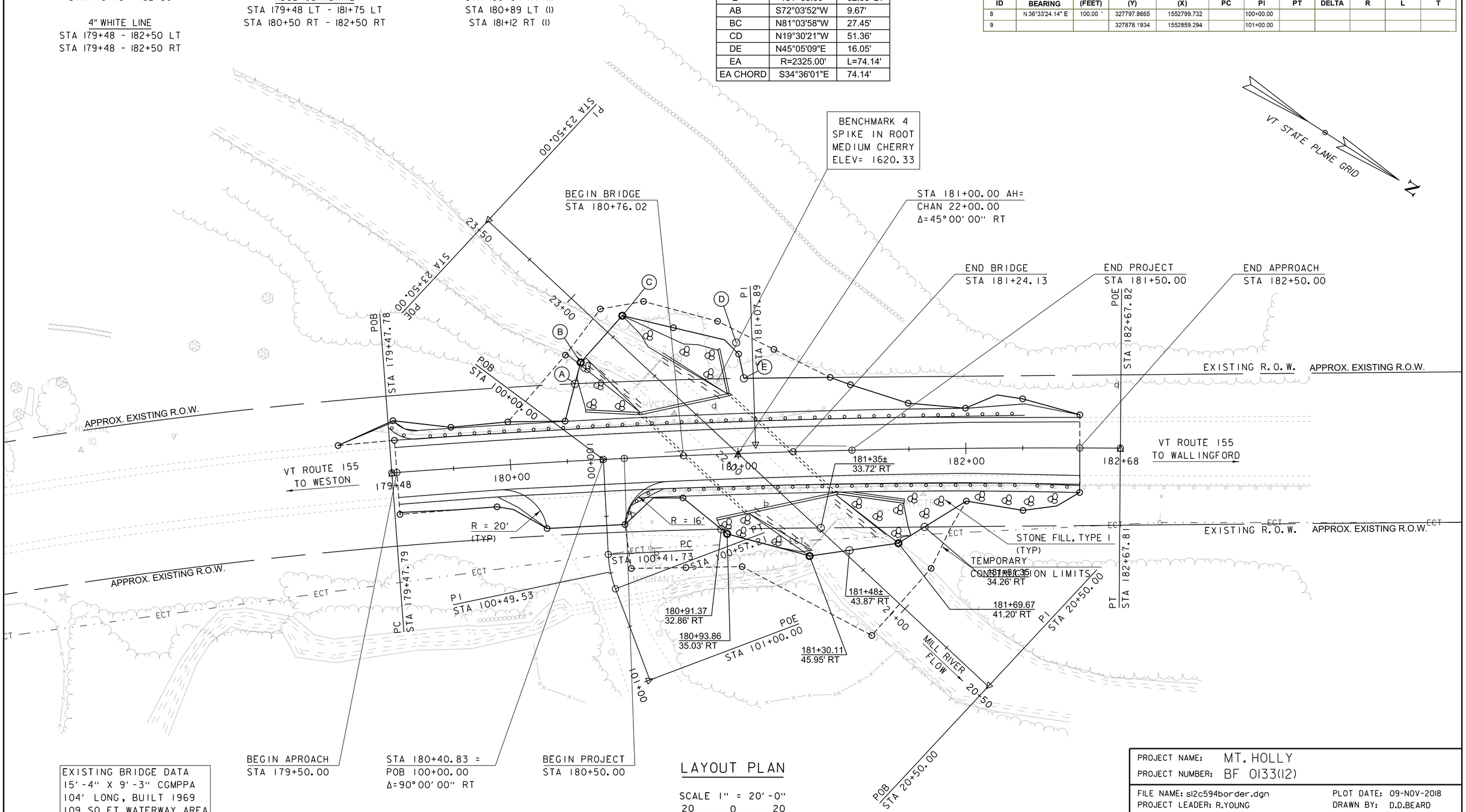
PROPOSED R.O.W. - PARCEL 1		
A	180+30.20	33.86' LT
B	180+33.14	43.07' LT
C	180+52.16	62.60' LT
D	181+00.90	48.73' LT
E	181+03.69	32.93' LT
AB	S72°03'52"W	9.67'
BC	N81°03'58"W	27.45'
CD	N19°30'21"W	51.36'
DE	N45°05'09"E	16.05'
EA	R=2325.00'	L=74.14'
EA CHORD	S34°36'01"E	74.14'

CONTROL LINE DATA - VT155_Proposed

POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
1	N 37°05'31.97" W	0.01 '	327735.8073	1552845.683		179+47.78					
	N 32°19'47.02" W	160.12 '	327863.5247	1552749.118	179+47.79		182+67.81	4°45'44.93"	3850.00 '	320.02 '	160.10 '
3			327998.8202	1552663.49		182+67.82					

CONTROL LINE DATA - Driveway 1

POINT ID	BEARING	DISTANCE (FEET)	NORTHING (Y)	EASTING (X)	PC	PI	PT	DELTA	R	L	T
8	N 36°33'24.14" E	100.00 '	327797.8665	1552799.732		100+00.00					
9			327878.1934	1552859.294		101+00.00					



EXISTING BRIDGE DATA
15'-4" X 9'-3" CGMPPA
104' LONG, BUILT 1969
109 SQ FT WATERWAY AREA
6 FT AVERAGE COVER

BEGIN APROACH
STA 179+50.00

STA 180+40.83 =
POB 100+00.00
Δ=90°00'00" RT

BEGIN PROJECT
STA 180+50.00

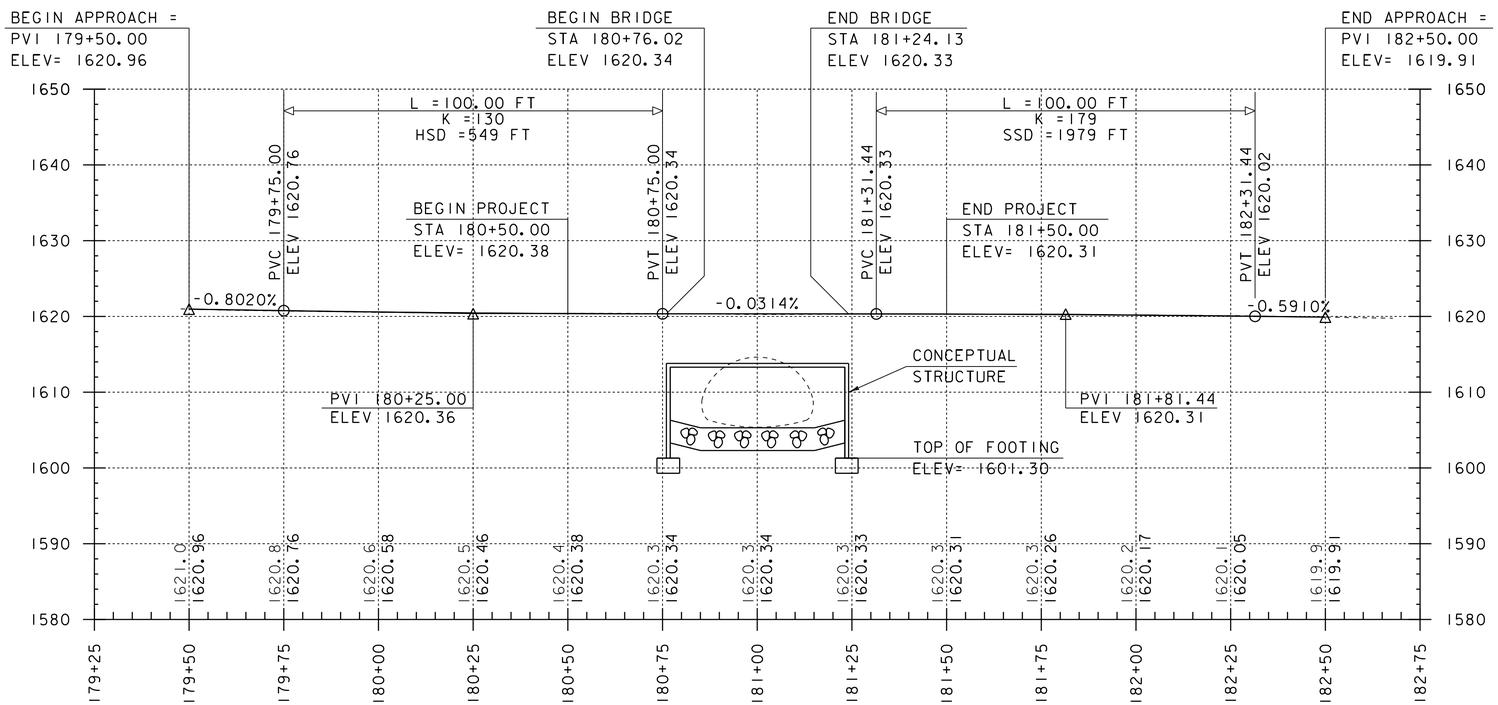
LAYOUT PLAN

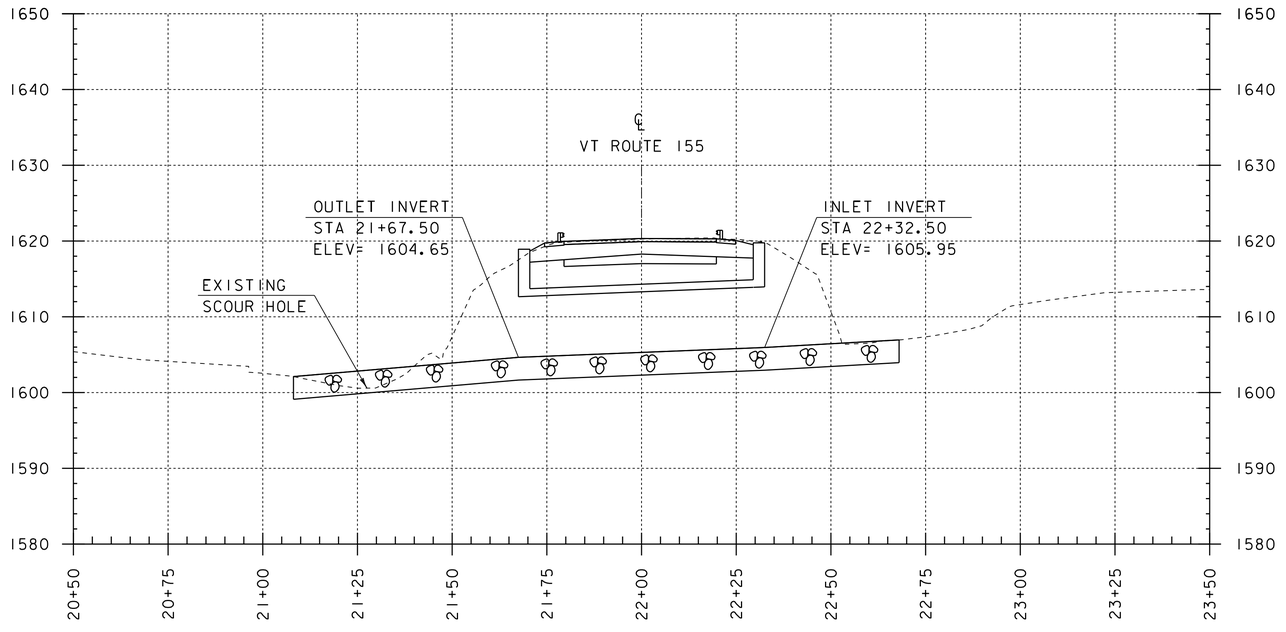
SCALE 1" = 20'-0"
20 0 20

PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2c594border.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
LAYOUT PLAN

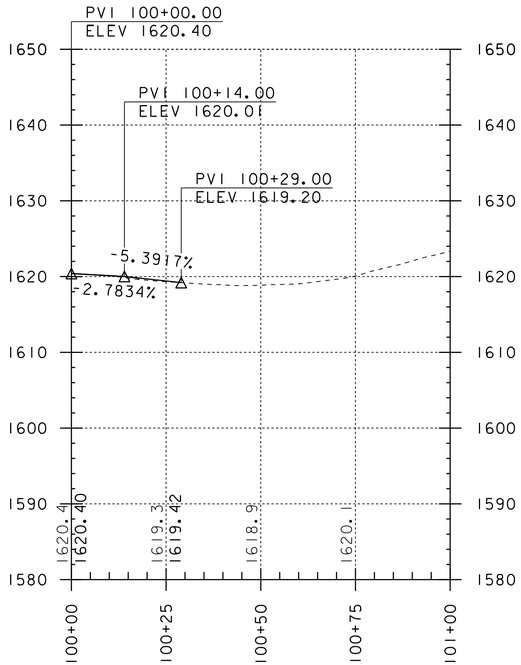
PLOT DATE: 09-NOV-2018
DRAWN BY: D.D.BEARD
CHECKED BY: C.MOONEY
SHEET 7 OF 25





NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)
FILE NAME: sl2c594pro.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: C.COTE
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
PROFILE SHEET 1	SHEET 8 OF 25

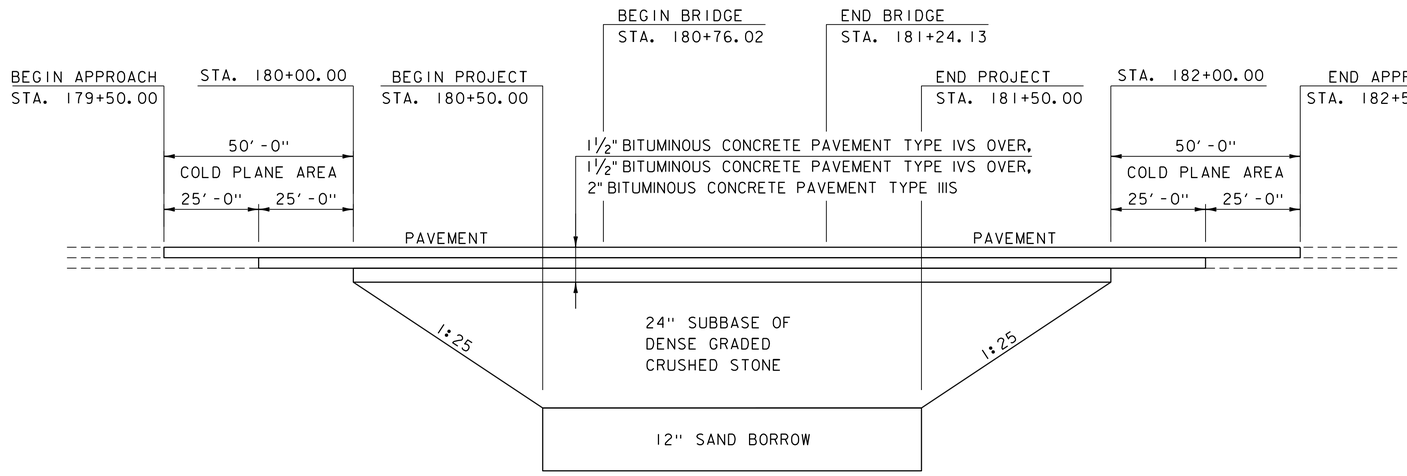


NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

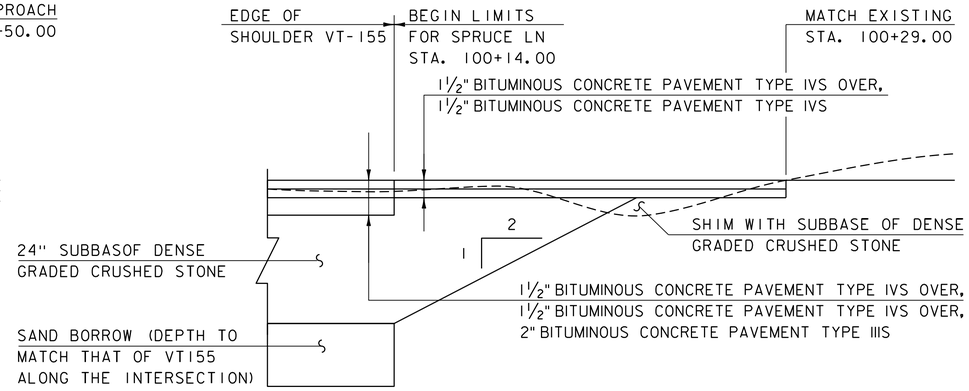
FILE NAME: sl2c594pro.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
PROFILE SHEET 2

PLOT DATE: 09-NOV-2018
DRAWN BY: C.COTE
CHECKED BY: C.MOONEY
SHEET 9 OF 25



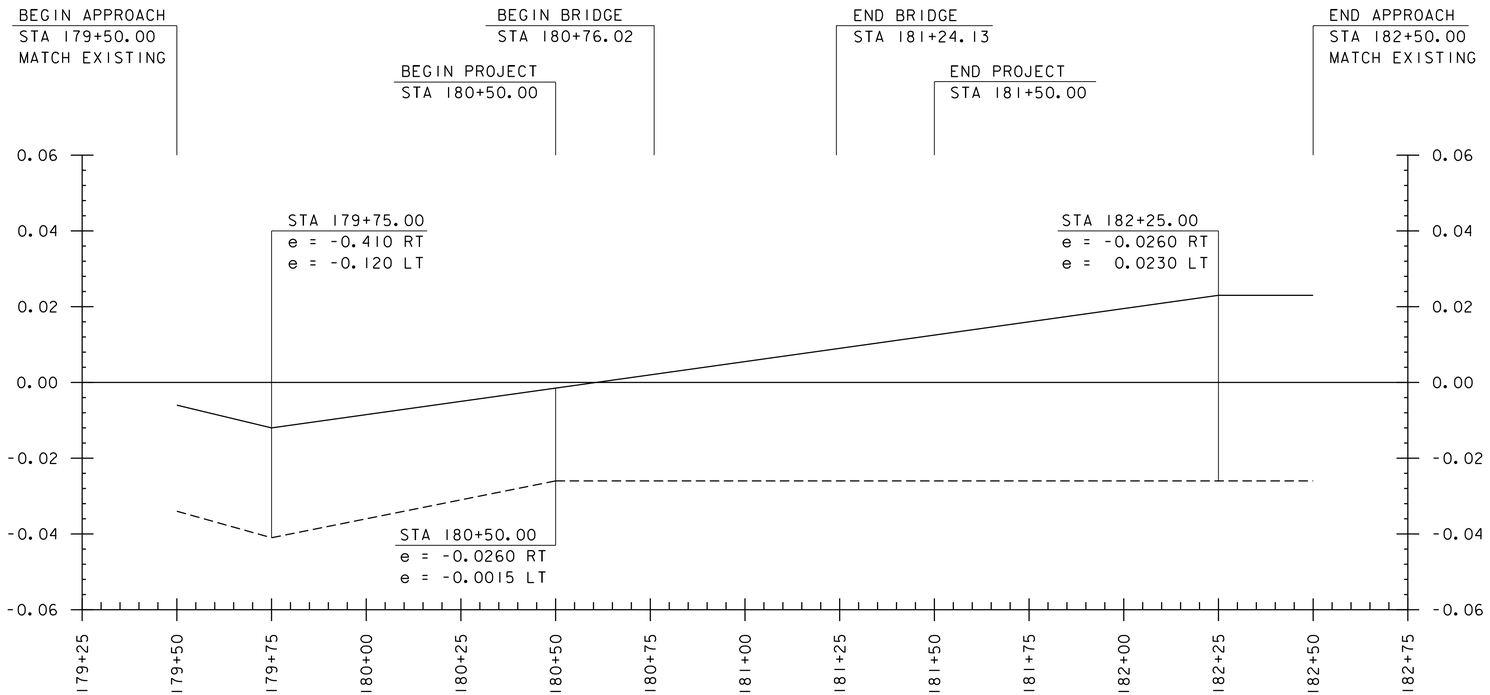
VT 155 MATERIAL TRANSITION

NOT TO SCALE



SPRUCE LANE MATERIAL TRANSITION

NOT TO SCALE



VT 155 BANKING DIAGRAM

NOT TO SCALE

PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)
FILE NAME: sl2c594xs.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: C.COTE
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
BANKING AND MATERIAL TRANSITION DIAGRAMS	SHEET 10 OF 25

VT STATE PLANE GRID

N

N/F
RICCIO, DEBRA

PAQUETTE, BRUCE & MARIE

23+50

23+00

P I
STA 181+07.89

BURIED CABLE TO BE
ABANDONED BY THE
UTILITY COMPANY PRIOR
TO THE PROJECT

EXISTING R.O.W.

VT ROUTE 155
TO WESTON

179+48

180+00

180+68

182+00

182+68

VT ROUTE 155
TO WALLINGFORD

GUY
WIRE COMB
6
3-9-II

18" x 94" x 3" CGMPPA
FLOW

GUY
WIRE

COMB
6X
3-9-10

EXISTING R.O.W.

GRAVEL
DRIVE

DRY
HYDRANT

8" CIP
TO DRY
HYDRANT

50" CGMP FLOW

N/F
BURGESS, EDWARD
AND
BEAUDREAU, CHRISTINE

21+00

MILL RIVER
FLOW

20+50

BUCK, GREGORY J.

MUMBER,
RICHARD A. & DARLENE T.

UT

ECT

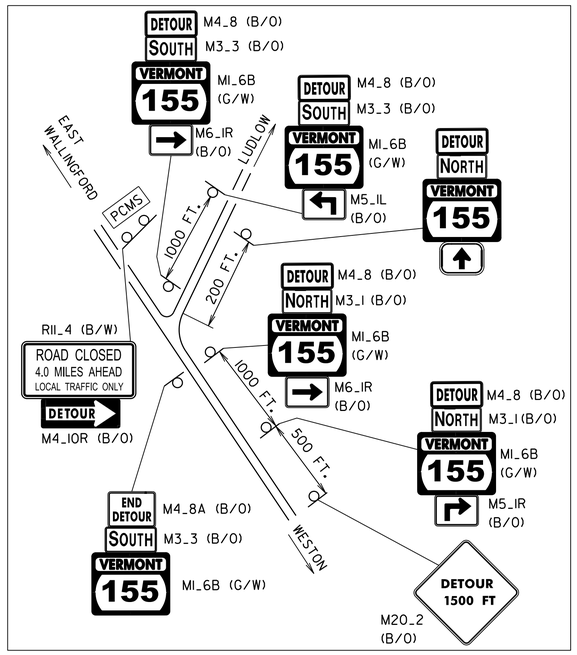
P

L

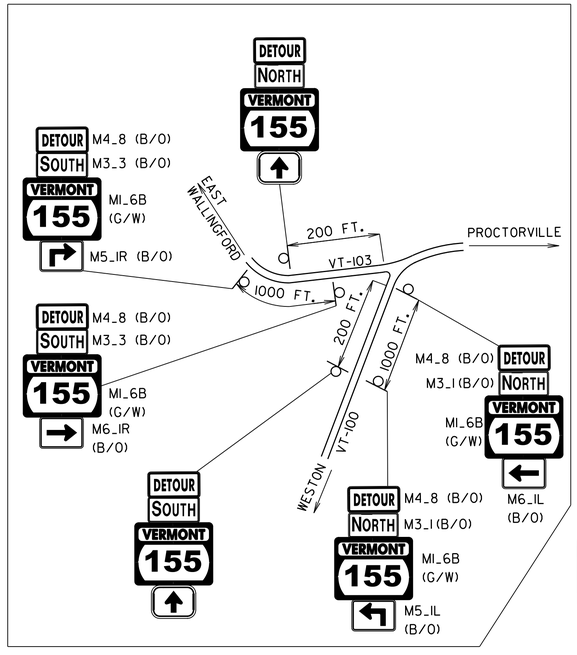
LAYOUT PLAN

SCALE 1" = 20'-0"
20 0 20

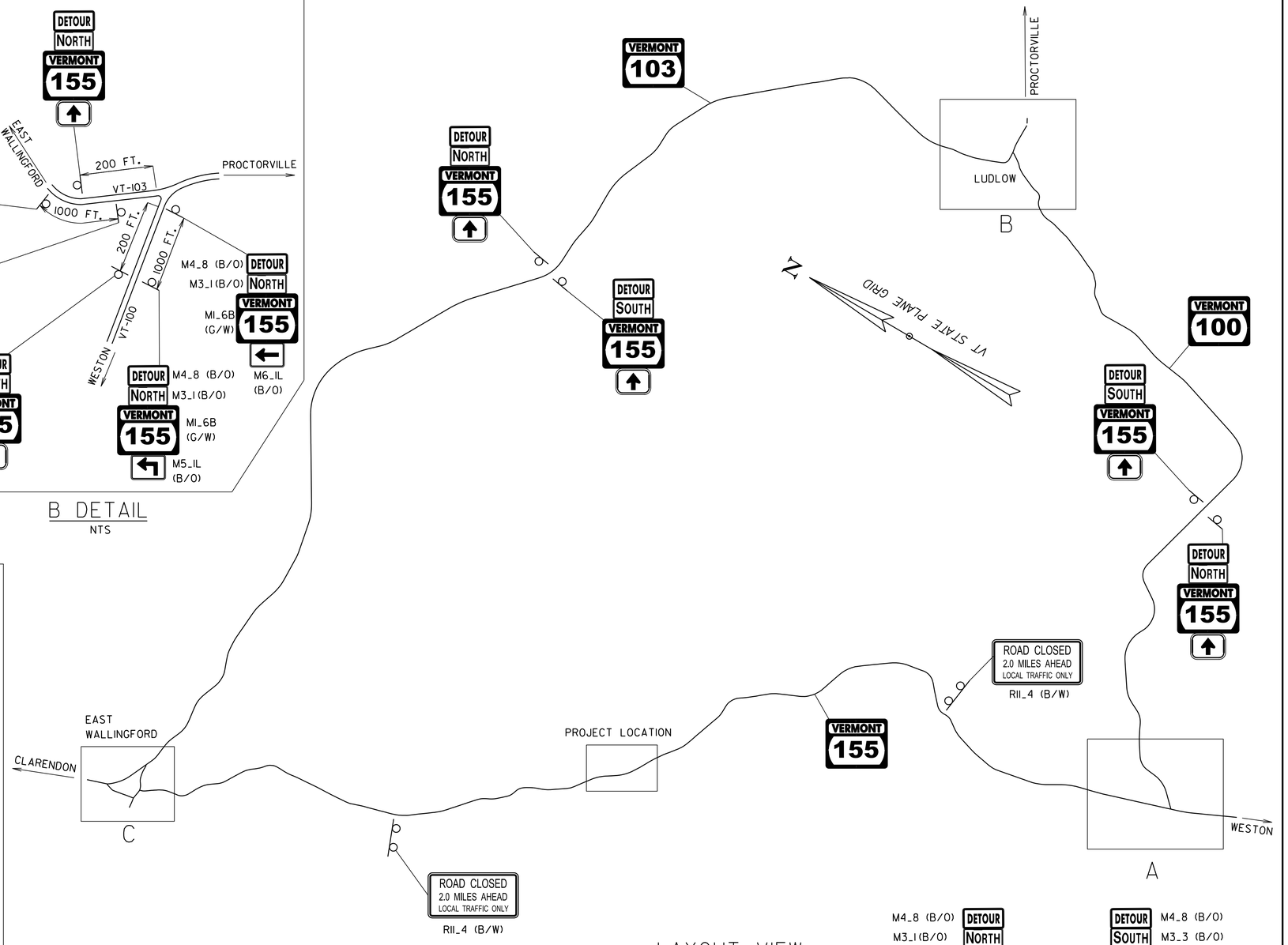
PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)
FILE NAME: s12c594util.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: D.D.BEARD
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
UTILITY LAYOUT PLAN	SHEET II OF 25



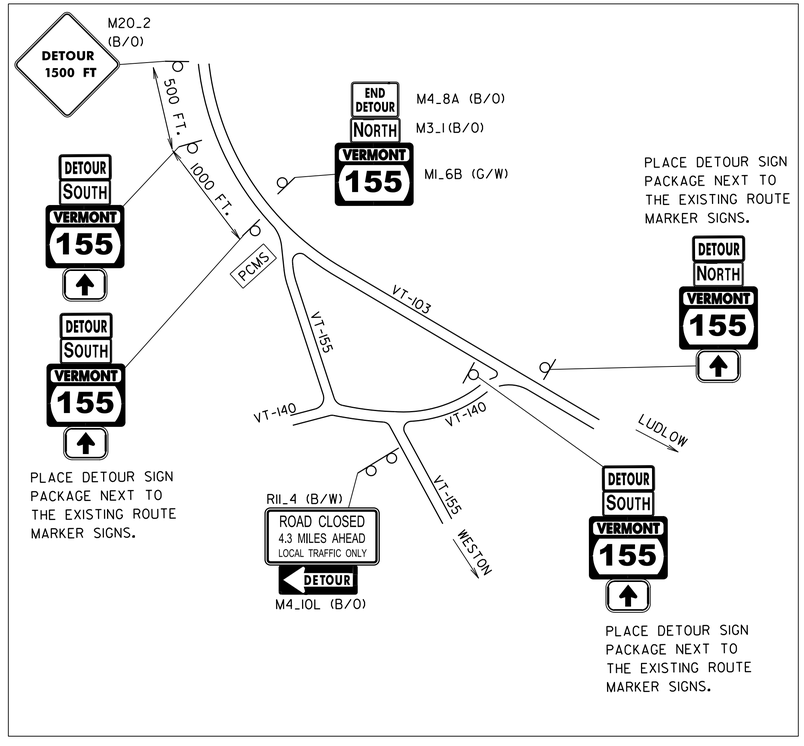
A DETAIL
NTS



B DETAIL
NTS



LAYOUT VIEW
NTS



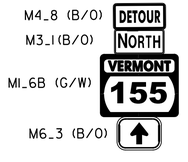
C DETAIL
NTS

NOTES:

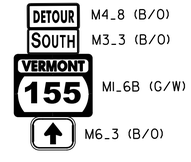
1. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PLACED OFF THE EDGE OF THE ROADWAY, OUTSIDE THE CLEAR ZONE, BUT SHALL BE VISIBLE FROM THE ROADWAY. ANY VEGETATION THAT INTERFERES WITH VISIBILITY OF THE PCMS SHALL BE REMOVED. REMOVAL OF THE VEGETATION WILL BE INCIDENTAL TO ITEM 641.15, "PORTABLE CHANGEABLE MESSAGE SIGN".

2. ORANGE FLAGS SHALL BE USED WITH TEMPORARY DETOUR SIGNS WITH BLACK LETTERING ON WHITE BACKGROUNDS TO HIGHLIGHT INFORMATION FOR THE TRAVELING PUBLIC.

3. SEE CONTRACT DOCUMENTS FOR CLOSURE DATES.



TYPICAL NORTH ASSEMBLY



TYPICAL SOUTH ASSEMBLY

PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)

FILE NAME: sl2c594det.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: G.ROKES
DESIGNED BY: G.ROKES	CHECKED BY: C.MOONEY
OFFSITE DETOUR LAYOUT	SHEET 12 OF 25

SOIL CLASSIFICATION

AASHTO	
A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

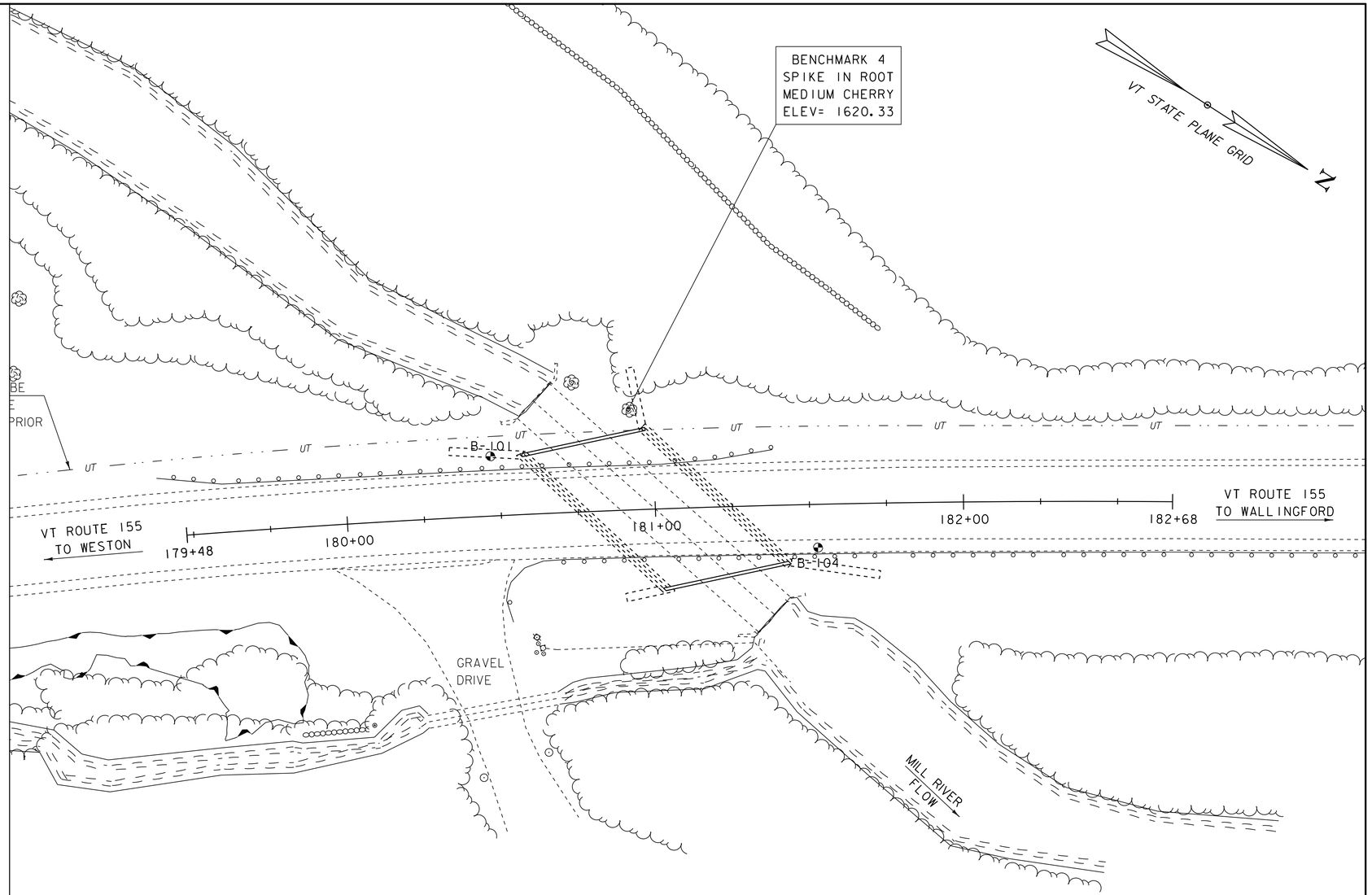
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

▼	Water Elevation
⊕	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		



DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

1. The subsurface explorations shown herein were made between _____ and _____ by the Agency.

2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.

3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.

GENERAL NOTES

4. Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.

5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.

6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-101	178+88	20.0LT	1620.0	1570.0
B-104	179+95	14.4RT	1619.9	1557.2

PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2c594Boring.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
BORING INFORMATION SHEET

PLOT DATE: 09-NOV-2018
DRAWN BY: D.D.BEARD
CHECKED BY: C.MOONEY
SHEET 13 OF 25

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Mount Holly
Bf 0133(12)
VT 155 Culv. 7

Boring No.: **B-101**
Page No.: 1 of 2
Pin No.: 12c594
Checked By: SPM

Boring Crew: Garrow, Emerson
Date Started: 9/27/16 Date Finished: 9/30/16
VTSPG NAD83: N 327803.89 ft E 1552774.05 ft
Station: 178+88 Offset: -20.00
Ground Elevation: 1620.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:		Auto/AWJ
Rig:	CME 45C SK<<SUB>><<SUB>> = 1.42	

Groundwater Observations

Date	Depth (ft)	Notes
09/28/16	10.2	W.T. before drilling
09/29/16	9.8	W.T. before drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-2-4, Sa, brn, Moist, Rec. = 0.4 ft				1-1-1-1 (2)	9.5	19.3	63.9	16.8
		A-1-a, SaGr, brn, Moist, Rec. = 0.8 ft				2-4-6-3 (10)	3.9	55.1	38.1	6.8
5		A-1-a, SaGr, brn, Moist, Rec. = 0.8 ft, Lab Note: Broken rock was within sample Field Note:, NXDC, Cleaned out casing				5-6-10-8 (16)	4.2	61.8	31.6	6.6
		A-1-a, SaGr, blk-brn, Moist, Rec. = 0.2 ft Field Note:, NXDC, Cleaned out casing				5-3-2-2 (5)	14.4	70.8	26.5	2.7
		A-1-b, SiSaGr, gry-brn, Moist, Rec. = 1.0 ft, Lab Note: Broken rock was within sample Field Note:, NXDC, Cleaned out casing				4-3-8-7 (11)	10.0	47.6	29.4	23.0
10		A-1-a, SaGr, gry-brn, Moist, Rec. = 0.7 ft, Lab Note: Broken rock was within sample Field Note:, NXDC, Cleaned out casing				3-4-15-19 (19)	11.8	61.8	29.5	8.7
		Field Note:, No Recovery				2-7-2-1 (9)				
		Field Note:, NXDC, Cleaned out casing								
15		A-4, GrSaSi, gry, Moist, Rec. = 1.3 ft, Lab Note: Broken rock was within sample Field Note:, NXDC, Cleaned out casing				10-21-25-35 (46)	9.9	24.7	31.9	43.4
		A-4, SaSi, brn, Moist, Rec. = 1.1 ft				26-46-28-R@0" (74)	11.6	17.3	31.8	50.9
		Field Note:, NXDC, Cleaned out casing A-4, SaSi, brn, Moist, Rec. = 1.4 ft				23-33-26-R@3.5" (59)	13.2	19.3	30.7	50.0
20		A-4, GrSaSi, brn, Moist, Rec. = 1.4 ft				23-28-32-R@3.5" (60)	13.0	22.1	41.1	36.8
		Field Note:, NXDC, Cleaned out casing								
25		A-4, GrSaSi, gry-brn, Moist, Rec. = 0.7 ft				40-R@2.5" (R)	9.7	20.0	36.7	43.3
		Field Note:, Cobbles								
30		A-1-a, SaGr, gry-brn, Moist, Rec. = 0.4 ft, Lab Note: Broken rock was within sample				R@3.5" (R)	7.6	60.0	25.8	14.2

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
<<SUB>><<SUB>> is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 MT. HOLLY BF0133(12).GPJ VERMONT AOT.GDT 10/20/16

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Mount Holly
Bf 0133(12)
VT 155 Culv. 7

Boring No.: **B-101**
Page No.: 2 of 2
Pin No.: 12c594
Checked By: SPM

Boring Crew: Garrow, Emerson
Date Started: 9/27/16 Date Finished: 9/30/16
VTSPG NAD83: N 327803.89 ft E 1552774.05 ft
Station: 178+88 Offset: -20.00
Ground Elevation: 1620.0 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:		Auto/AWJ
Rig:	CME 45C SK<<SUB>><<SUB>> = 1.42	

Groundwater Observations

Date	Depth (ft)	Notes
09/28/16	10.2	W.T. before drilling
09/29/16	9.8	W.T. before drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
35		Field Note:, NXDC, Cleaned out casing A-4, SiSa, brn, Moist, Rec. = 1.2 ft				21-38-R@3.5" (R)	16.2	9.4	49.1	41.5
40		Field Note:, NXDC, Cleaned out casing A-4, SiSa, Lt/brn, Moist, Rec. = 0.2 ft Field Note:, NXDC, Cleaned out casing				R@2.5" (R)	15.1	0.2	52.1	47.7
45		Field Note:, No Recovery				R@0" (R)				
50		50.0 ft - 55.0 ft, Tan/white, Muscovite-biotite-plagioclase-quartz GRANITIC GNEISS, with rust and brown staining along joints. Medium hard, Moderately weathered, Poor rock, NX, RMR=27	1 (45)	82 (0)	4 5 4 4 3	Top of Bedrock @ 50.0 ft				
55		55.0 ft - 60.0 ft, Tan/white, Muscovite-biotite-quartz GRANITIC GNEISS, with rust and brown staining along joints. Vertical joints at 57.0 feet to 57.3 feet and 58.3 feet to 58.6 feet. Medium hard, Moderately weathered, Poor rock, NX, RMR=36	2 (40)	100 (0)	4 3 4 3 6					
60		Hole stopped @ 60.0 ft								
65		Remarks: Hole collapsed at 9.0 feet. 1. Sample was attempted at 50 feet. No penetration, no recovery.								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
<<SUB>><<SUB>> is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 MT. HOLLY BF0133(12).GPJ VERMONT AOT.GDT 10/20/16

PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2c594Boring.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
BORING LOGS 1

PLOT DATE: 09-NOV-2018
DRAWN BY: D.D.BEARD
CHECKED BY: C.MOONEY
SHEET 14 OF 25

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Mount Holly
Bf 0133(12)
VT 155 Culv. 7

Boring No.: **B-104**
Page No.: 1 of 2
Pin No.: 12c594
Checked By: SPM

Boring Crew: Garrow, Judkins, Emerson
Date Started: 9/19/16 Date Finished: 9/23/16
VTSPG NAD83: N 327911.67 ft E 1552737.07 ft
Station: 179+95 Offset: 14.40
Ground Elevation: 1619.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACSUB>><<SUB>><SUB>	

Groundwater Observations

Date	Depth (ft)	Notes
09/21/16	13.2	W.T. before drilling
09/22/16	11.8	W.T. before drilling
09/23/16	11.6	W.T. before drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.6 ft								
		A-1-a, Gr, brn, Moist, Rec. = 0.4 ft, Lab Note: A lot of broken rock was within sample				11-20-10 (30)	3.8	86.2	8.8	5.0
		A-1-a, SaGr, brn, Moist, Rec. = 0.6 ft, Lab Note: A lot of broken rock was within sample				8-8-16-16 (24)	4.8	58.3	31.1	10.6
		Field Note:, NXDC, Cleaned out casing								
5		A-1-a, SaGr, blk-brn, Moist, Rec. = 0.3 ft, Lab Note: Sample consisted of clean broken rock				R@5" (R)	7.4	79.2	20.8	
		Field Note:, NXDC, Cleaned out casing								
		A-1-a, SaGr, blk, Moist, Rec. = 0.1 ft, Lab Note: Broken rock was within sample				7-6-4-4 (10)	4.6	71.7	20.2	8.1
		Field Note:, NXDC, Cleaned out casing								
		A-1-a, SaGr, brn-blk, Moist, Rec. = 0.8 ft, Lab Note: Broken rock was within sample				7-6-21-19 (27)	9.1	65.0	29.4	5.6
10		Field Note:, NXDC, Cleaned out casing								
		A-2-4, SiSa, brn, Moist, Rec. = 0.2 ft				4-2-2-2 (4)	28.1	7.0	72.6	20.4
		Field Note:, No Recovery				1-2-5-5 (7)				
		Field Note:, NXDC, Cleaned out casing								
15		A-1-a, Gr, gry, Moist, Rec. = 0.2 ft, Lab Note: Broken rock was within sample				19-23-14-14 (37)	6.6	81.5	15.2	3.3
		Field Note:, NXDC, Cleaned out casing								
		A-4, GrSaSi, gry, Moist, Rec. = 1.5 ft				8-33-26-29 (59)	10.6	21.0	29.0	50.0
		Field Note:, NXDC, Cleaned out casing								
		A-4, GrSaSi, gry, Moist, Rec. = 1.2 ft				19-29-R@5" (R)	10.4	28.3	32.9	38.8
20		Field Note:, NXDC, Cleaned out casing								
		Field Note:, No Recovery				R@5" (R)				
		Field Note:, NXDC, Cleaned out casing								
25		Field Note:, NXDC, Cleaned out casing								
		Field Note:, No Recovery				R@0" (R)				
30		Field Note:, No Recovery				R@2.5" (R)				
		Field Note:, NXDC, Cleaned out casing								
35		A-4, SaSi, brn, Moist, Rec. = 0.9 ft				15-R@5" (R)	17.9	3.5	47.0	49.5

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
<<SUB>><<SUB>> is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 MT. HOLLY BF0133(12).GPJ VERMONT AOT.GDT 10/20/16

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Mount Holly
Bf 0133(12)
VT 155 Culv. 7

Boring No.: **B-104**
Page No.: 2 of 2
Pin No.: 12c594
Checked By: SPM

Boring Crew: Garrow, Judkins, Emerson
Date Started: 9/19/16 Date Finished: 9/23/16
VTSPG NAD83: N 327911.67 ft E 1552737.07 ft
Station: 179+95 Offset: 14.40
Ground Elevation: 1619.9 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACSUB>><<SUB>><SUB>	

Groundwater Observations

Date	Depth (ft)	Notes
09/21/16	13.2	W.T. before drilling
09/22/16	11.8	W.T. before drilling
09/23/16	11.6	W.T. before drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
40		Field Note:, NXDC, Cleaned out casing								
		A-2-4, GrSiSa, brn, MTD, Rec. = 0.4 ft				R@5" (R)	13.1	20.9	48.3	30.8
		Field Note:, NXDC, Cleaned out casing								
45		A-2-4, GrSiSa, brn-white, Moist, Rec. = 0.1 ft				R@1" (R)	10.6	25.3	46.8	27.9
		Field Note:, NXDC, Cleaned out casing								
50		Field Note:, No Recovery				R@0" (R)				
		Field Note:, NXDC, Cleaned out casing								
55		A-4, SaSi, Lt/brn, MTD, Rec. = 0.4 ft				R@5" (R)	13.2	7.0	43.7	49.3
		Field Note:, NXDC, Cleaned out casing								
60		Field Note:, No Recovery				R@0" (R)				
		62.7 ft - 67.7 ft, Light gray, Muscovite-biotite-quartz-plagioclase GNEISS, with a near vertical joint at 64.7 feet to 65.2 feet. Brown staining along joints. Hard, Very slightly weathered, Good rock, NX, RMR=66	1 (30)	72 (75)	5 5 4 4 5	Top of Bedrock @ 62.7 ft				
65										
70		67.7 ft - 71.2 ft, Light gray &white, Quartzose biotite-muscovite-plagioclase GNEISS, Hard, Unweathered, Fair rock, NX, RMR=60	2 (60)	96 (79)	6 7 5 6 5					
		71.2 ft - 72.7 ft, Dark gray, Micaceous plagioclase GNEISS, Moderately hard, Unweathered								
		Hole stopped @ 72.7 ft								
75		Remarks: Hole collapsed at 6.5 feet.								

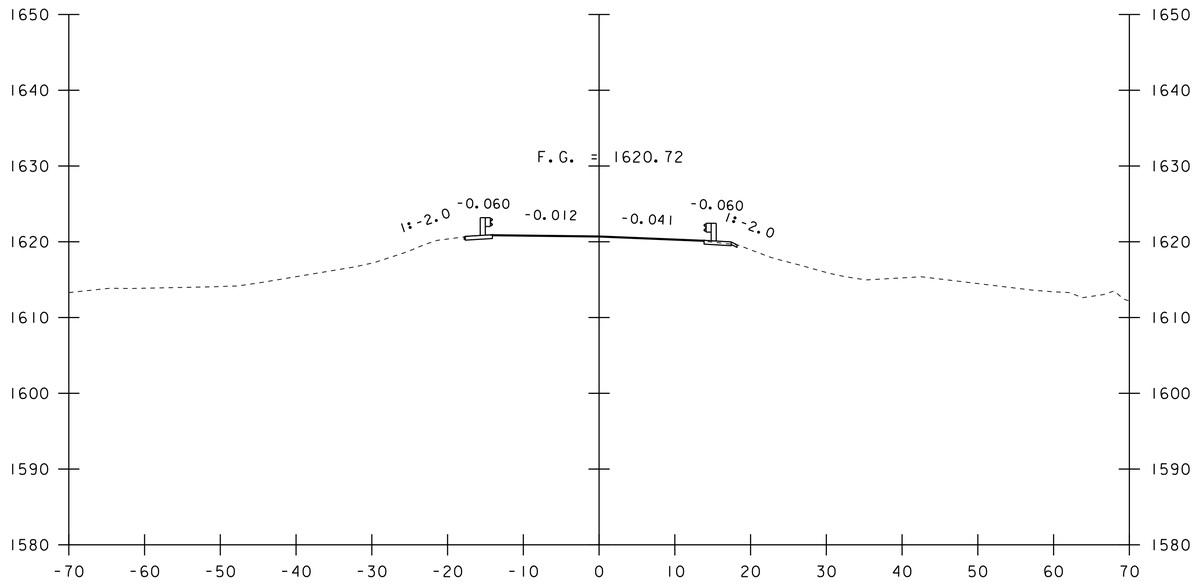
Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
<<SUB>><<SUB>> is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 MT. HOLLY BF0133(12).GPJ VERMONT AOT.GDT 10/20/16

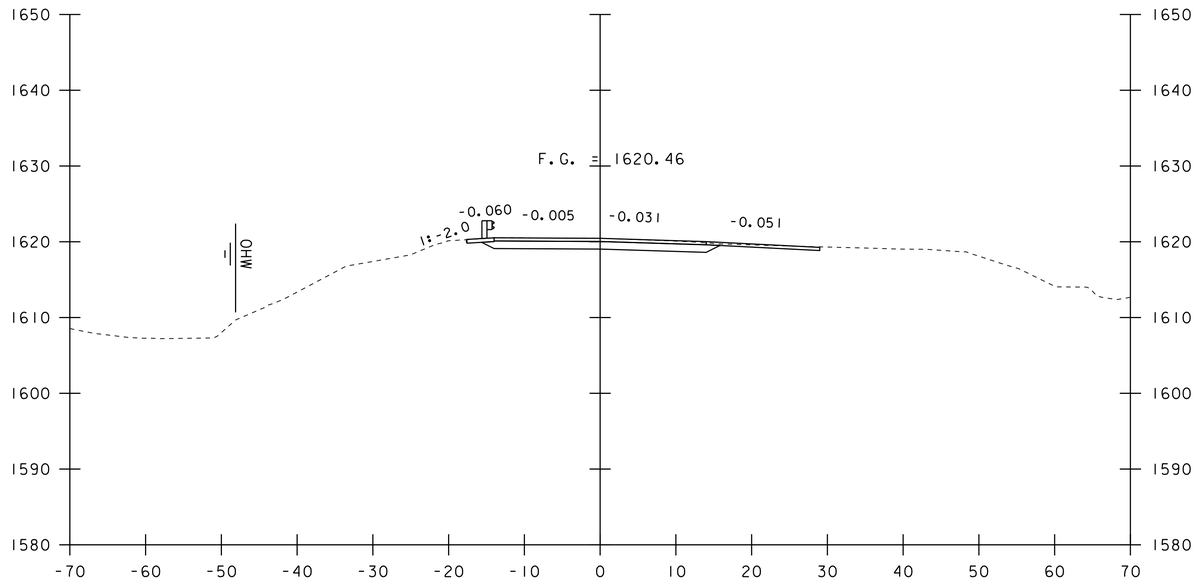
PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2c594Boring.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
BORING LOGS 2

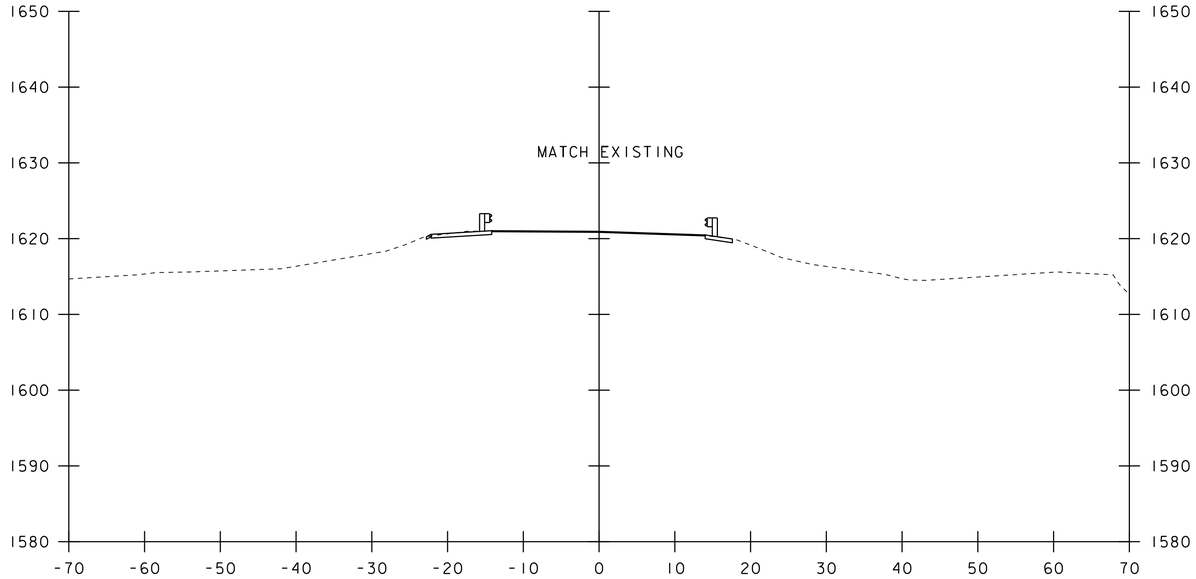
PLOT DATE: 09-NOV-2018
DRAWN BY: D.D.BEARD
CHECKED BY: C.MOONEY
SHEET 15 OF 25



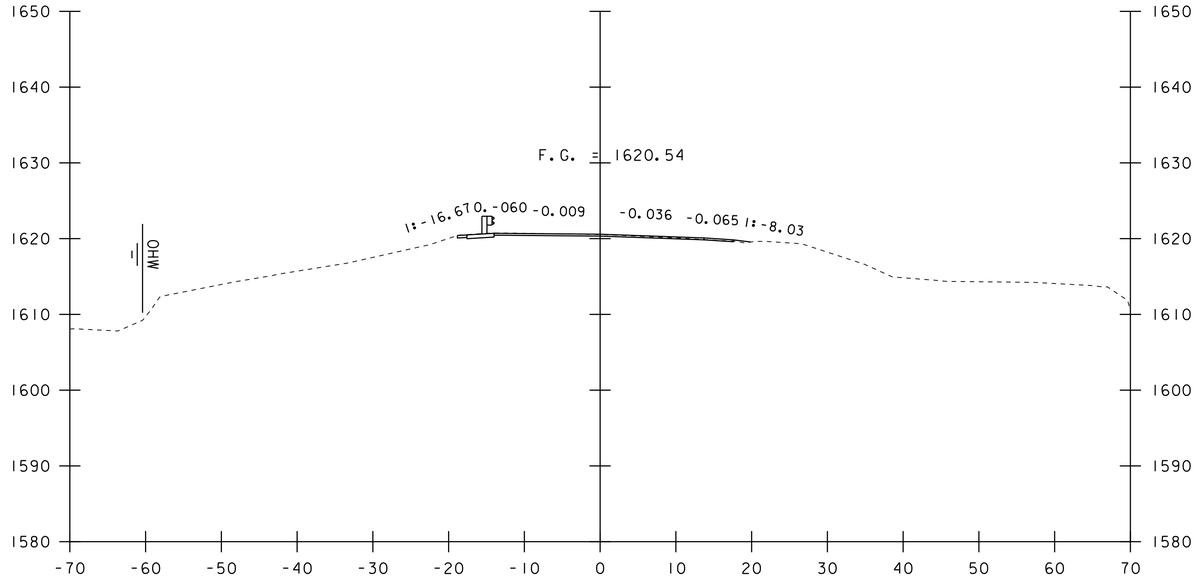
179+75



180+25



179+50



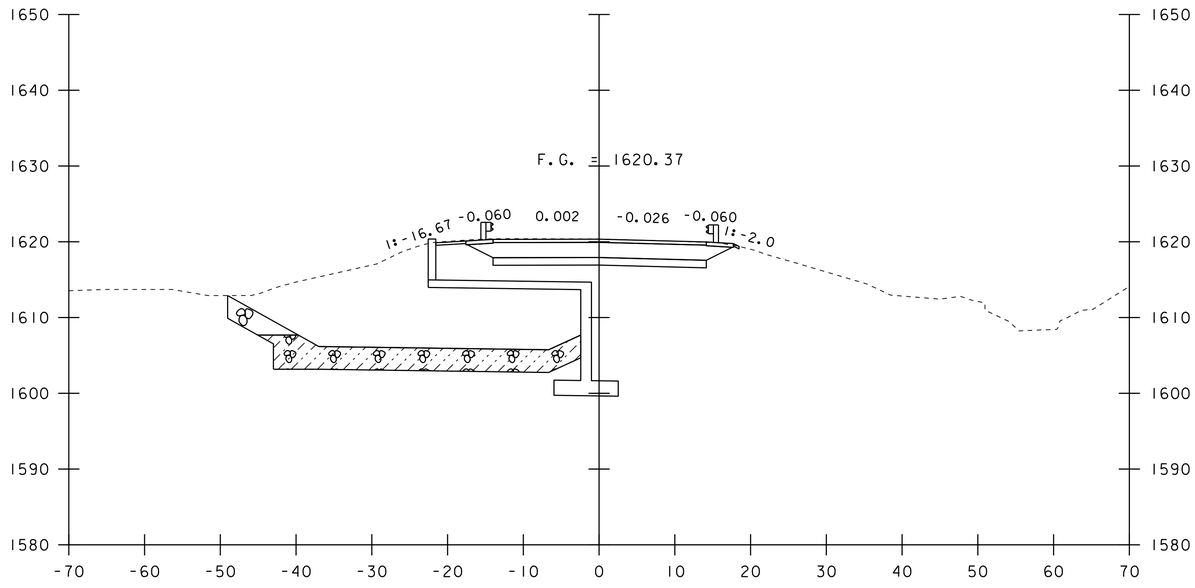
180+00

STA. 179+50 TO STA. 180+25

PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

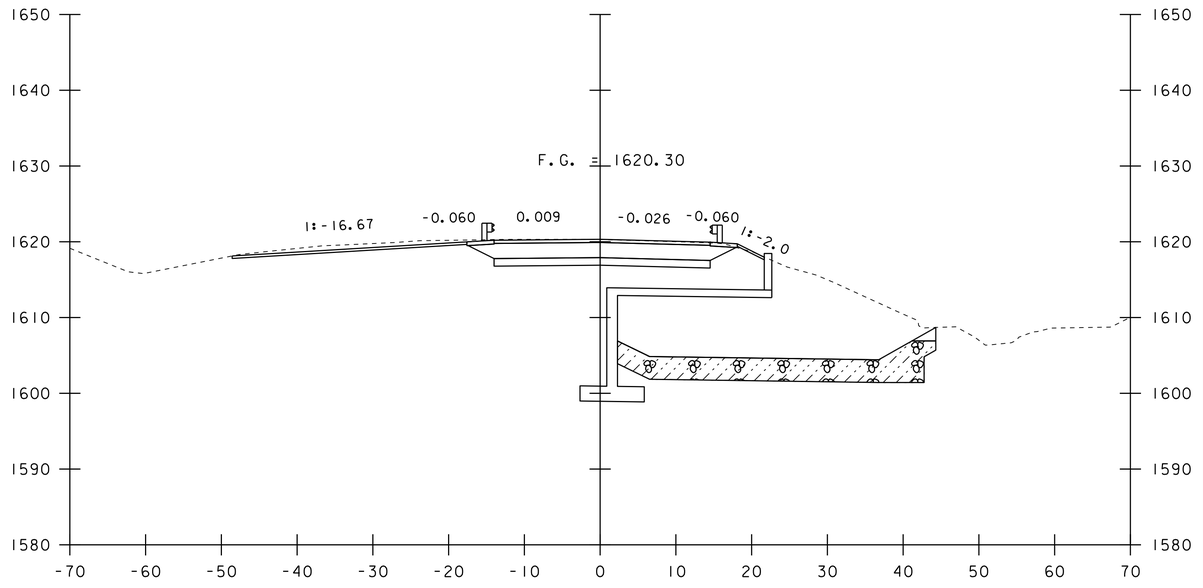
FILE NAME: sl2c594xs.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
VT-155 CROSS SECTIONS SHEET 1

PLOT DATE: 09-NOV-2018
DRAWN BY: C.COTE
CHECKED BY: C.MOONEY
SHEET 16 OF 25



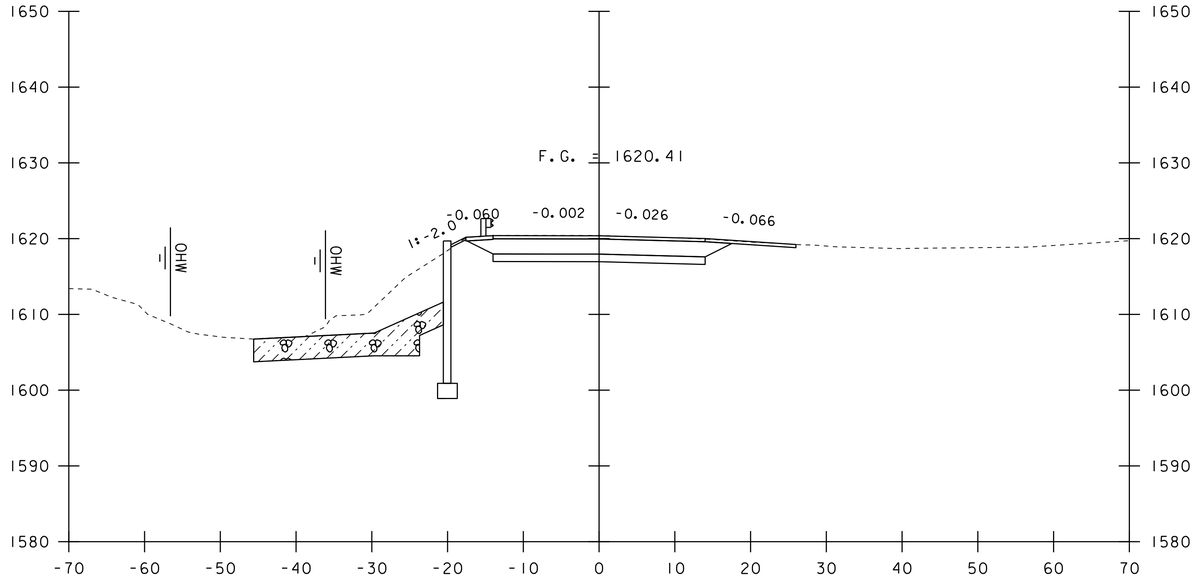
BEGIN BRIDGE
STA 180+76.02

180+75



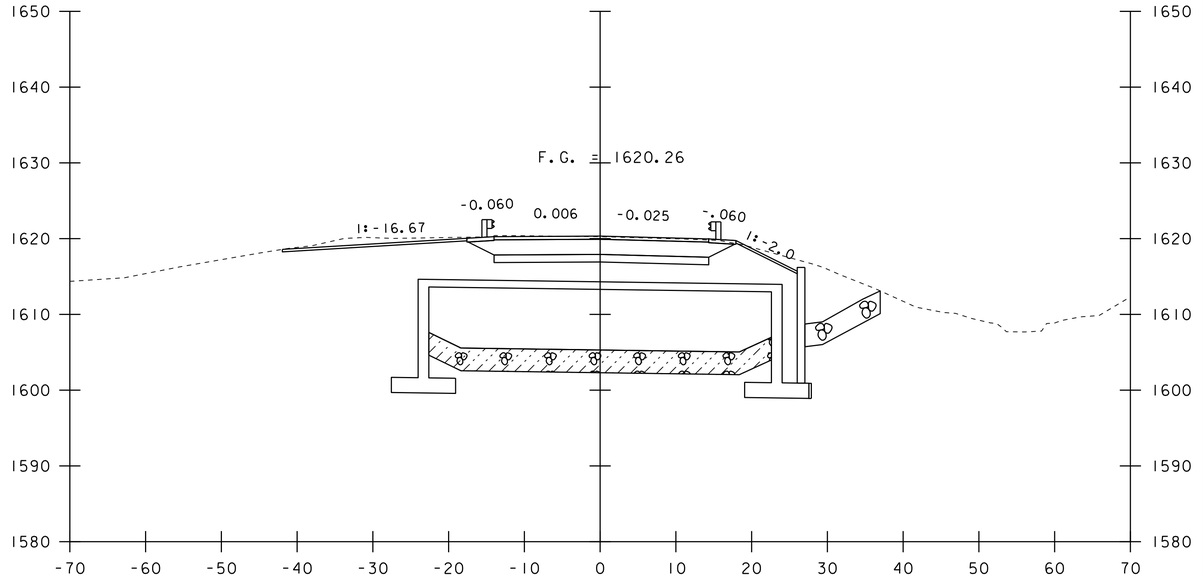
END BRIDGE
STA 181+24.13

181+25



BEGIN PROJECT

180+50

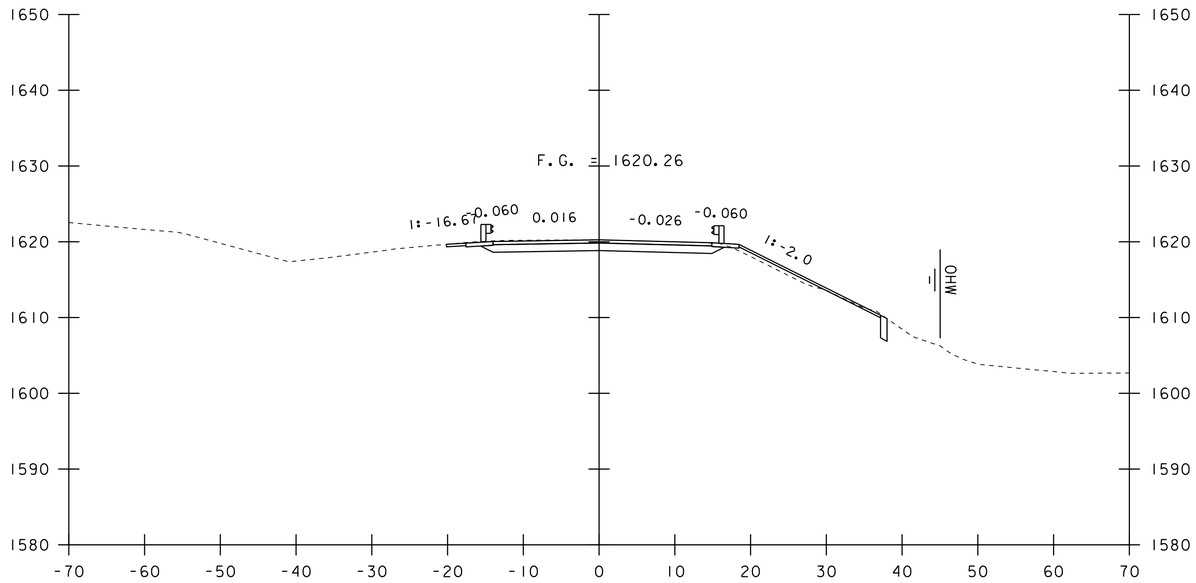


181+00

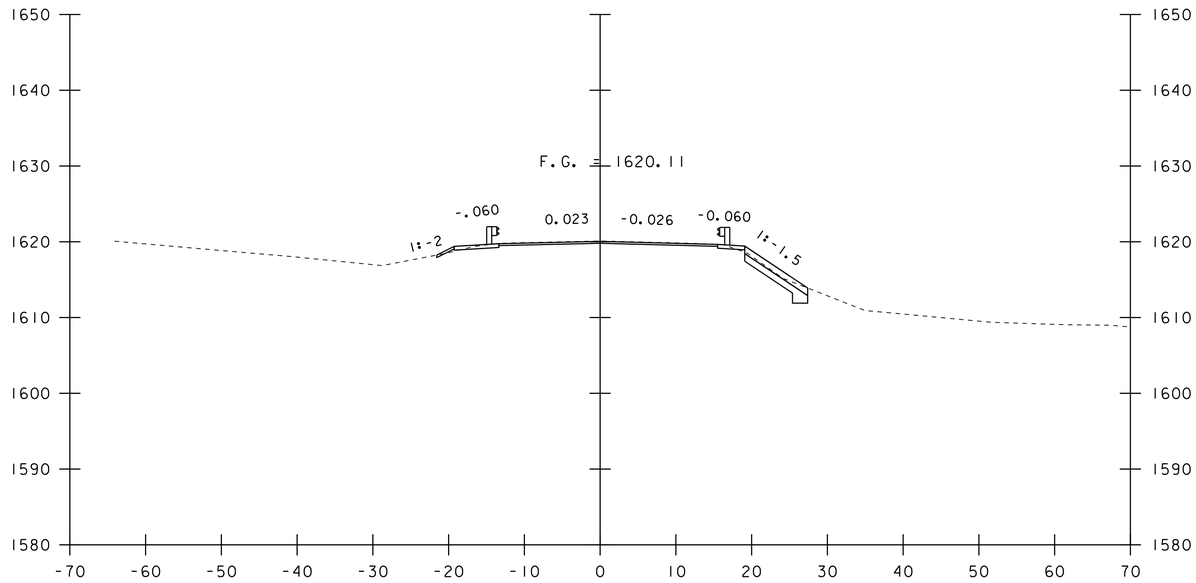
STA. 180+50 TO STA. 181+25

PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)

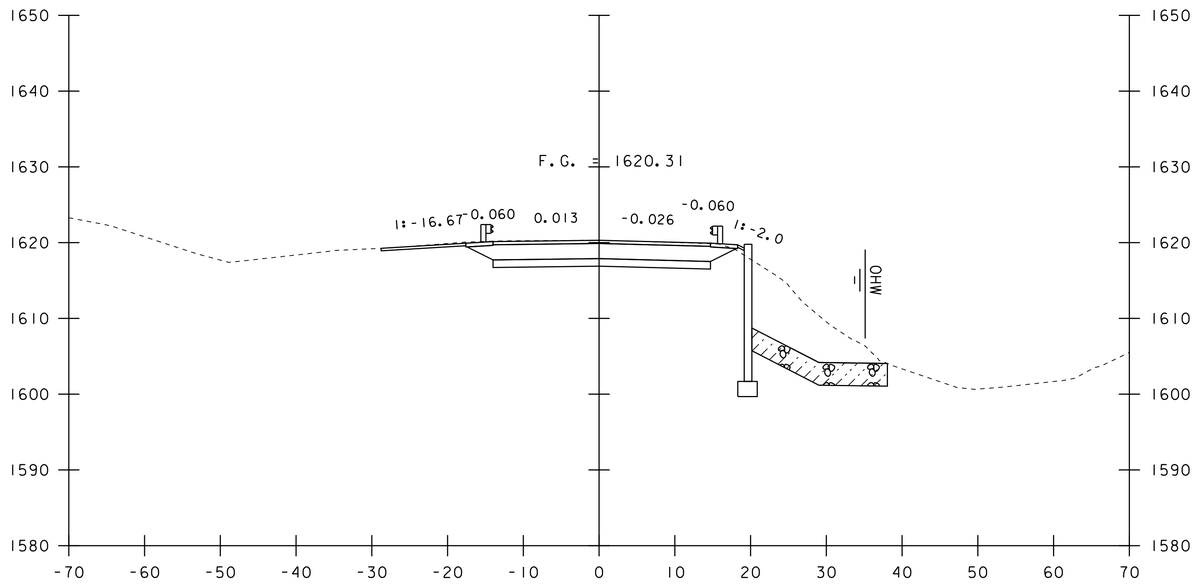
FILE NAME: sl2c594xs.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: C.COTE
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
VT-155 CROSS SECTIONS SHEET 2	SHEET 17 OF 25



181+75

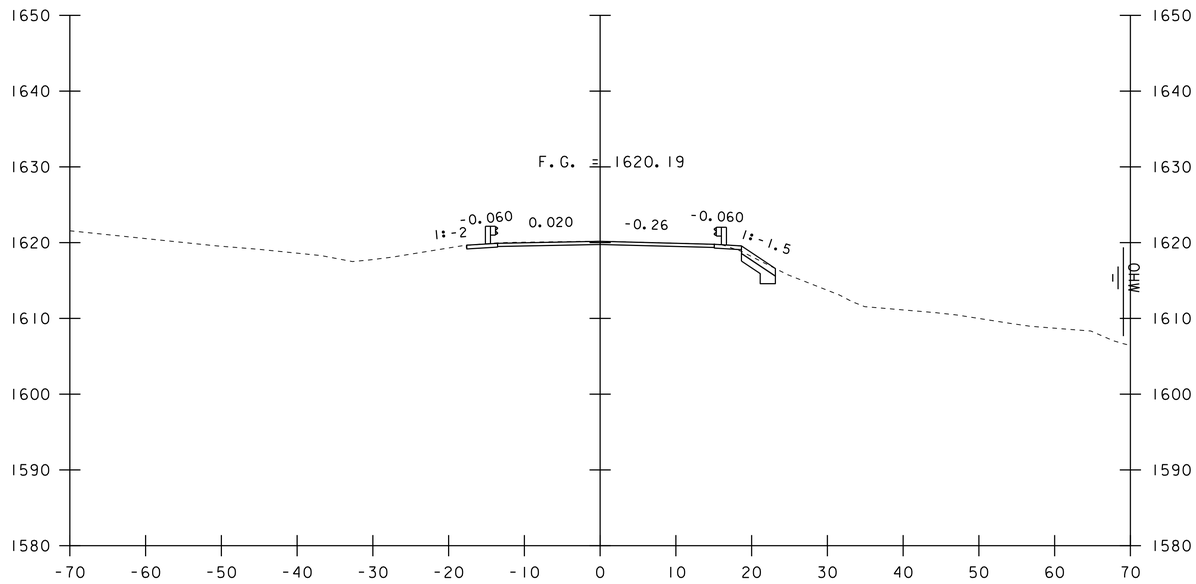


182+25



END PROJECT

181+50



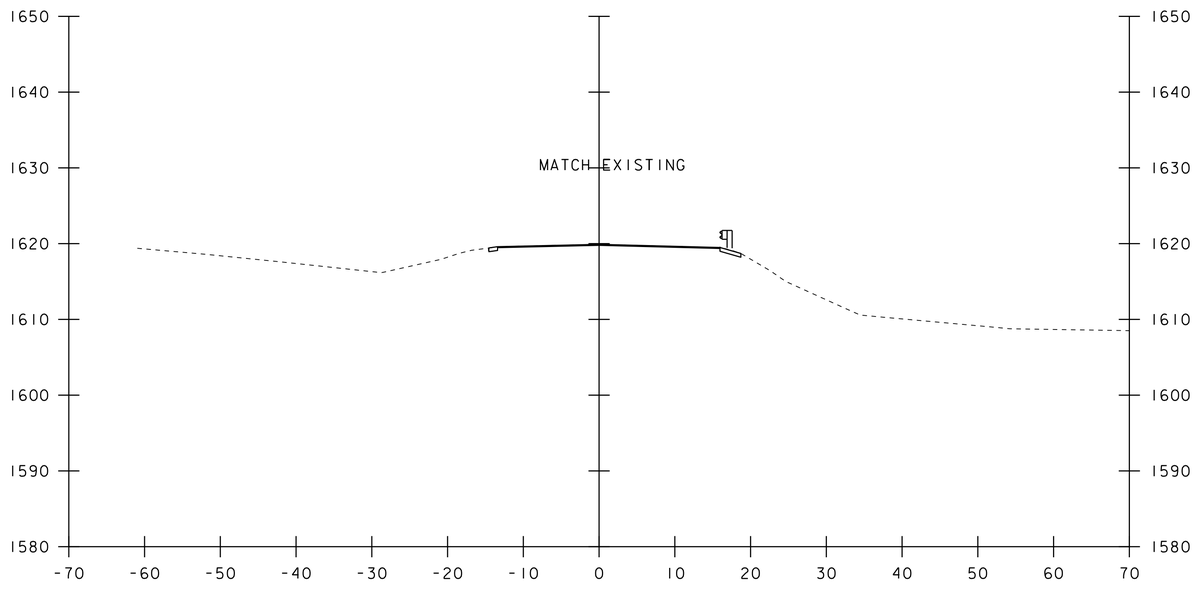
182+00

STA. 181+50 TO STA. 182+25

PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2c594xs.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
VT-155 CROSS SECTIONS SHEET 3

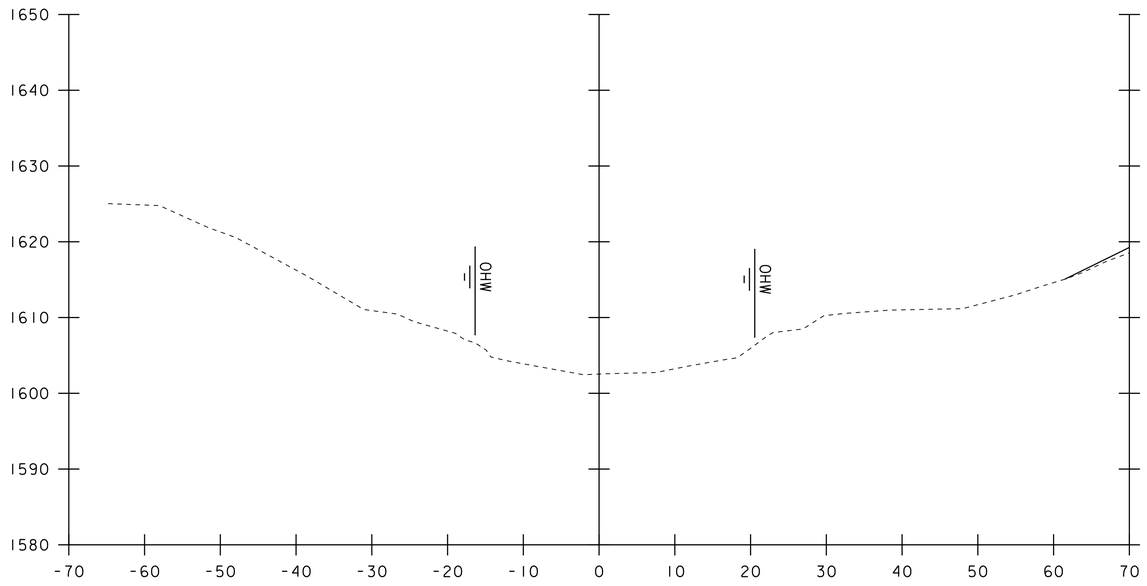
PLOT DATE: 09-NOV-2018
DRAWN BY: C.COTE
CHECKED BY: C.MOONEY
SHEET 18 OF 25



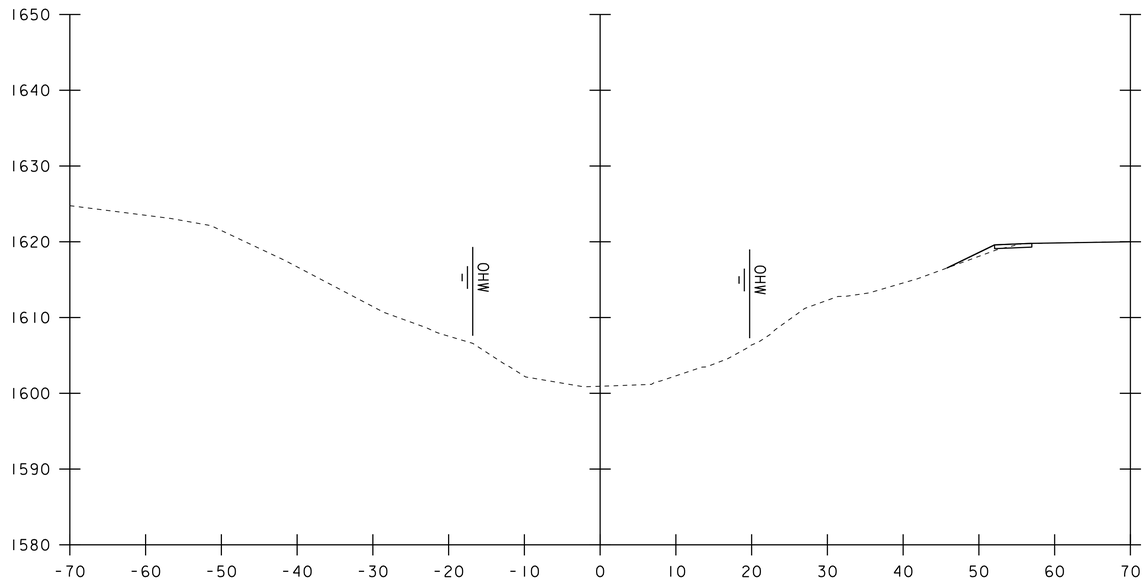
182+50

STA. 182+50

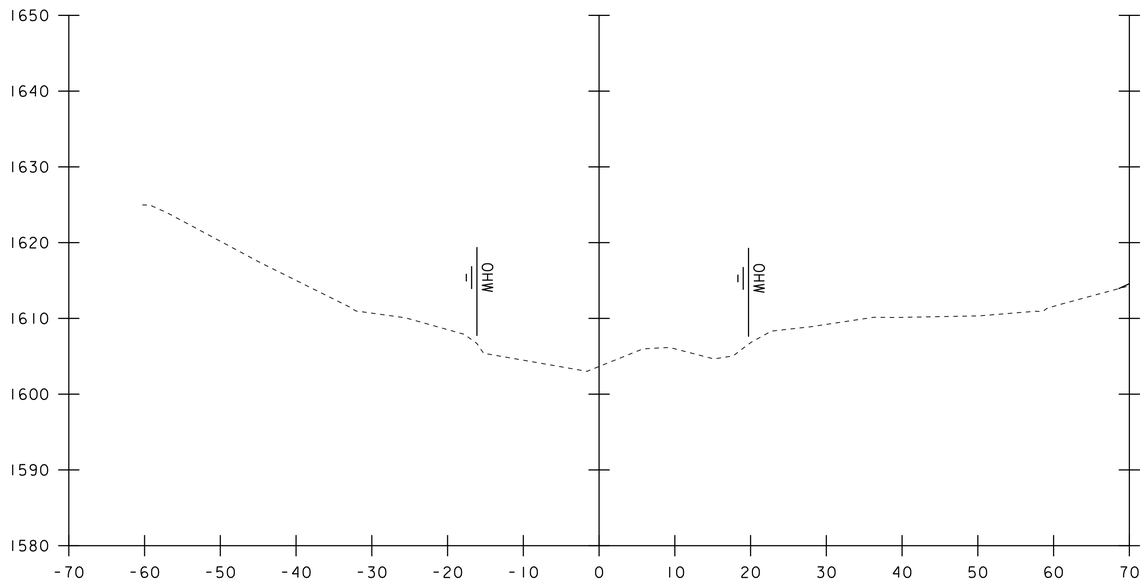
PROJECT NAME: MT. HOLLY	
PROJECT NUMBER: BF 0133(12)	
FILE NAME: sl2c594xs.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: C.COTE
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
VT-155 CROSS SECTIONS SHEET 4	SHEET 19 OF 25



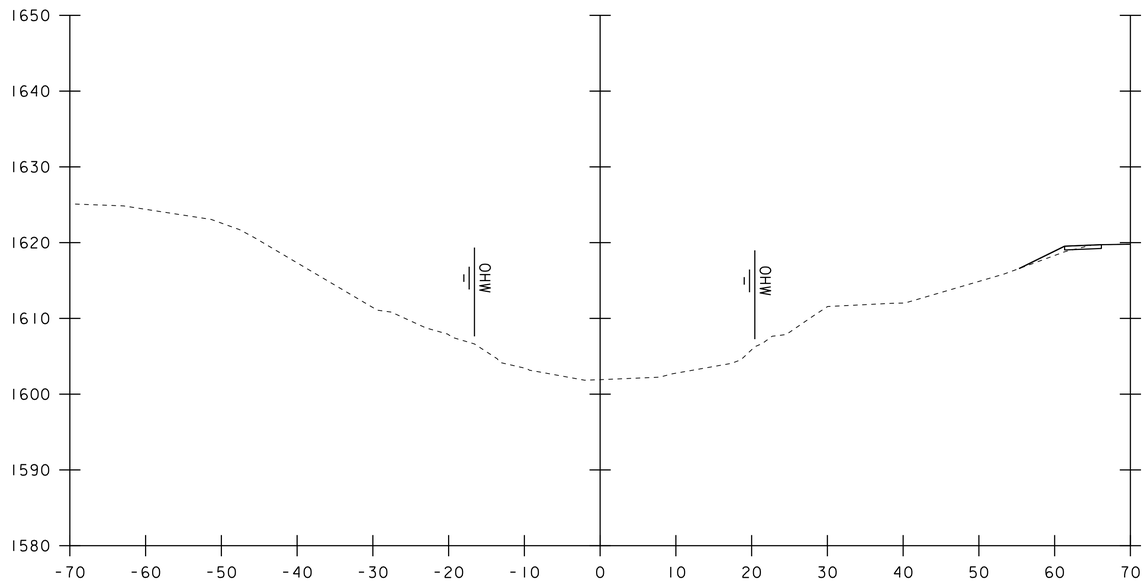
21+00



21+20



20+90

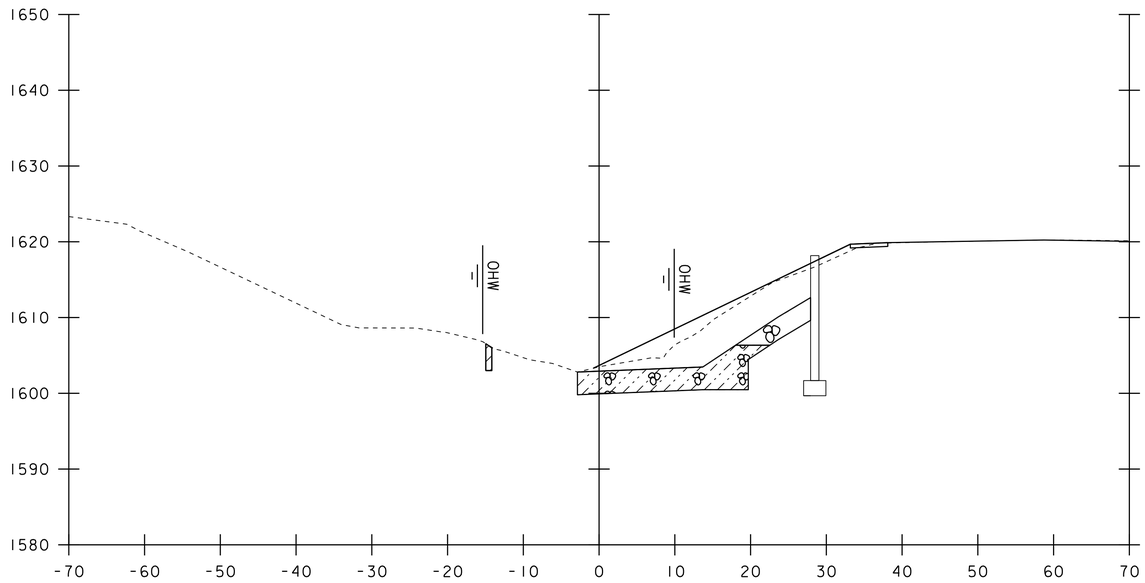


21+10

STA. 20+90 TO STA. 21+20

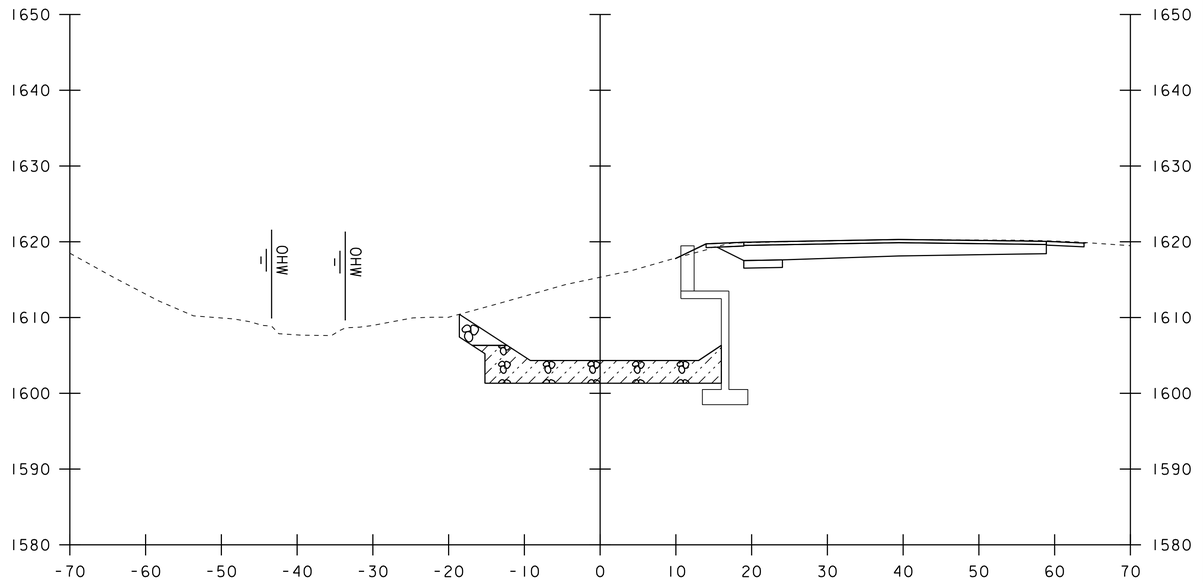
PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)

FILE NAME: sl2c594xs.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: C.COTE
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
CHANNEL SECTIONS SHEET 1	SHEET 20 OF 25

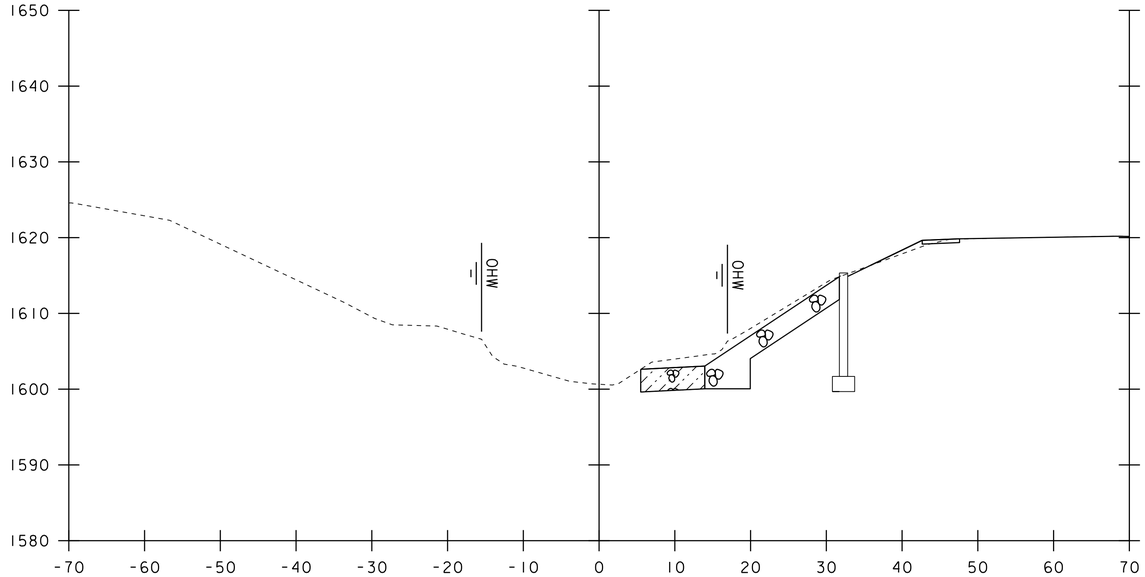


21+40

BEGIN 21+47 LT
UNCLASSIFIED CHANNEL EXCAVATION
STONE FILL TYPE III
E-STONE FILL TYPE III
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL

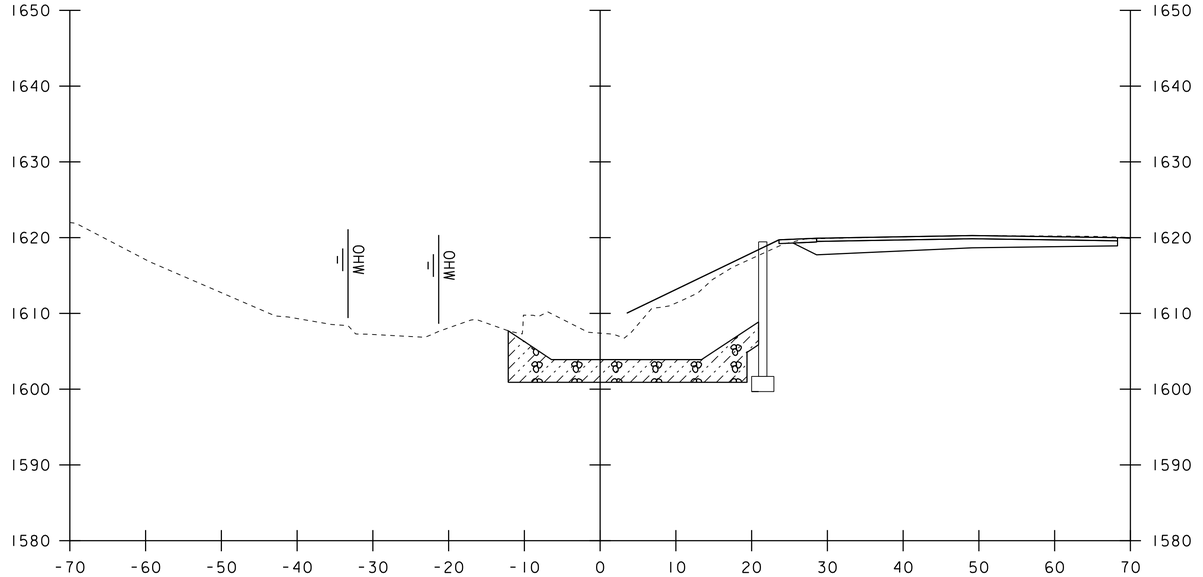


21+60



21+30

BEGIN 21+20 RT
UNCLASSIFIED CHANNEL EXCAVATION
STONE FILL TYPE III
E-STONE FILL TYPE III
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



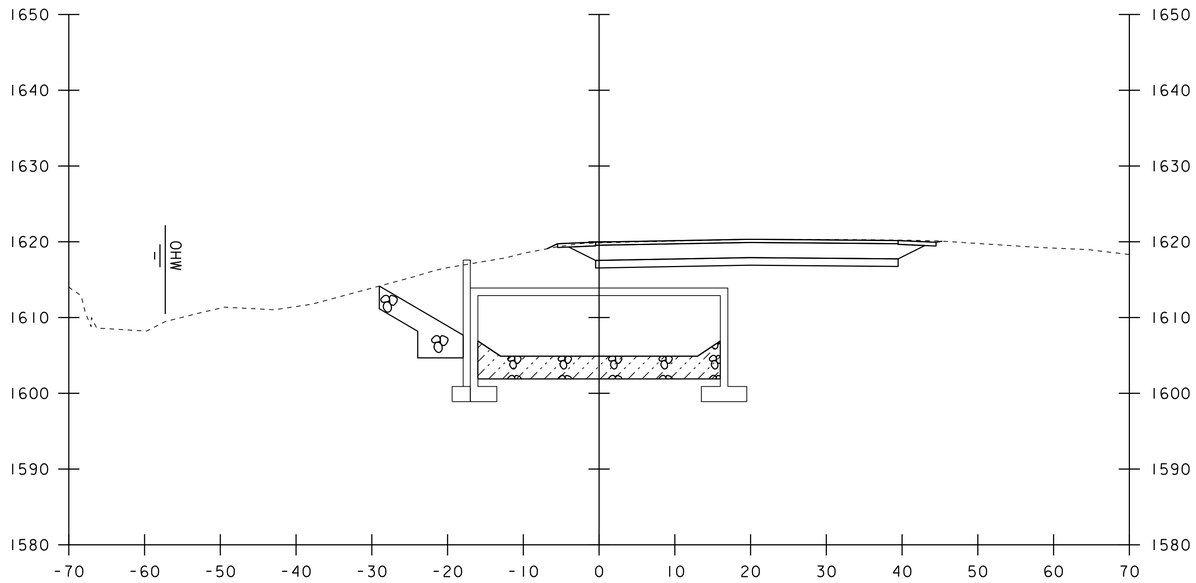
21+50

STA. 21+30 TO STA. 21+60

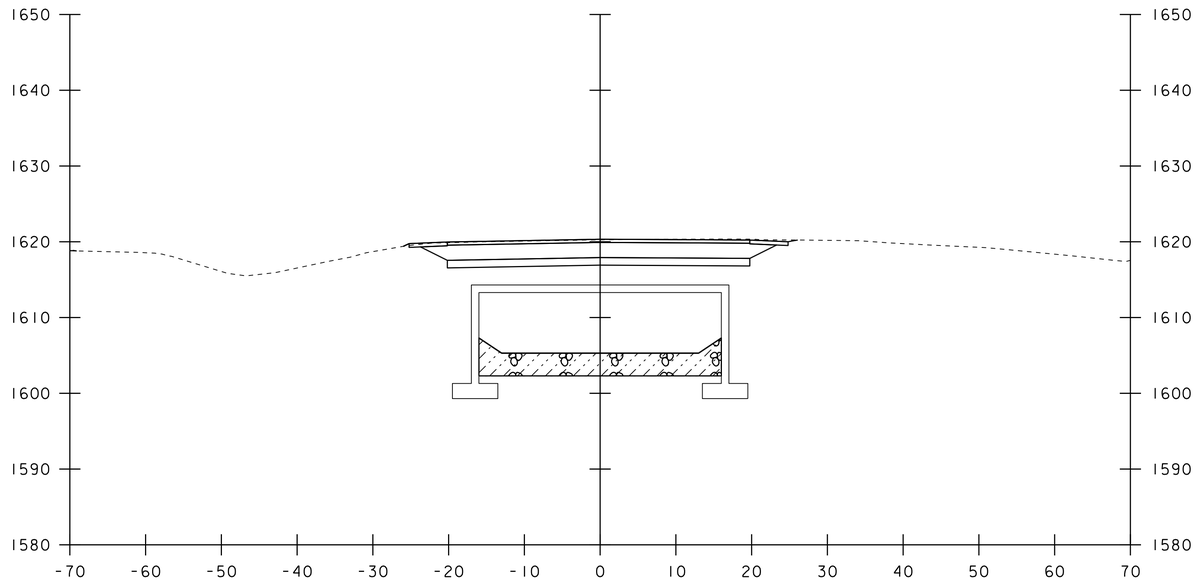
PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2c594xs.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
CHANNEL SECTIONS SHEET 2

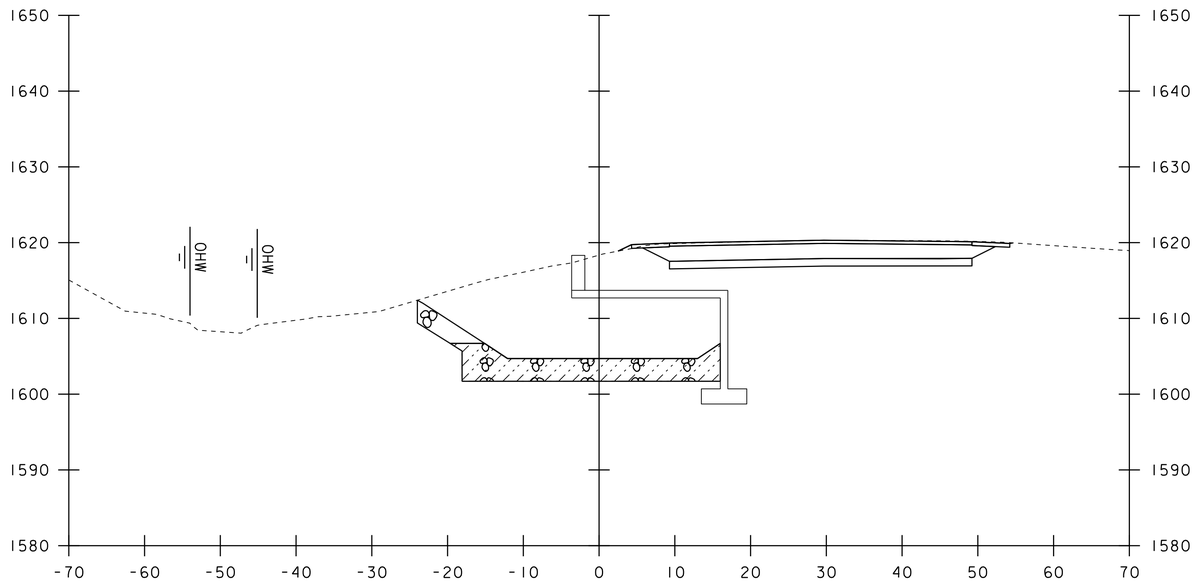
PLOT DATE: 09-NOV-2018
DRAWN BY: C.COTE
CHECKED BY: C.MOONEY
SHEET 21 OF 25



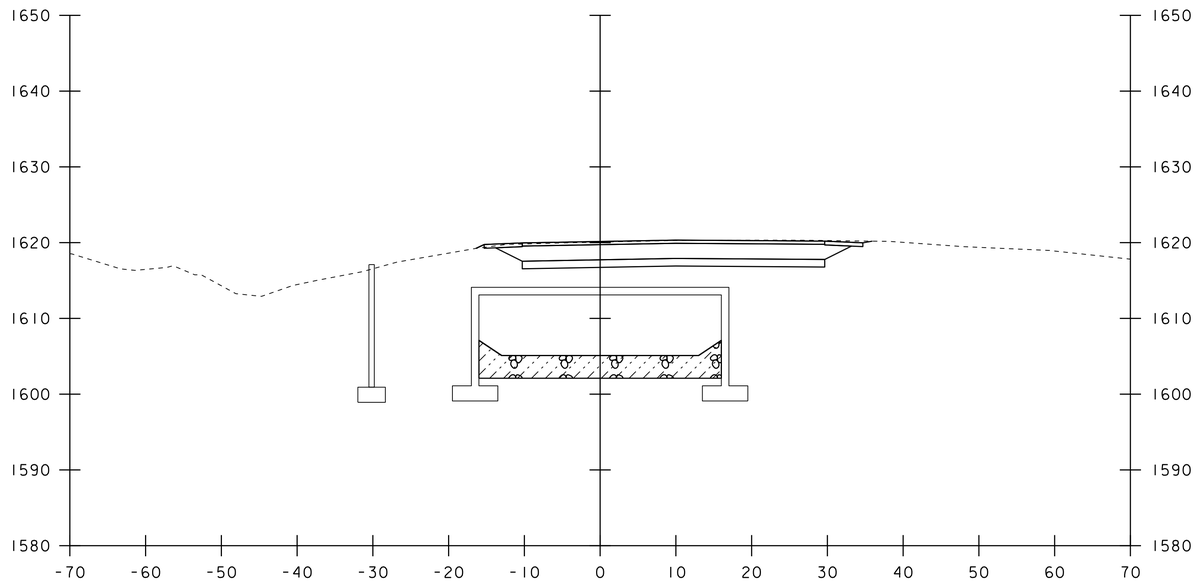
21+80



22+00



21+70

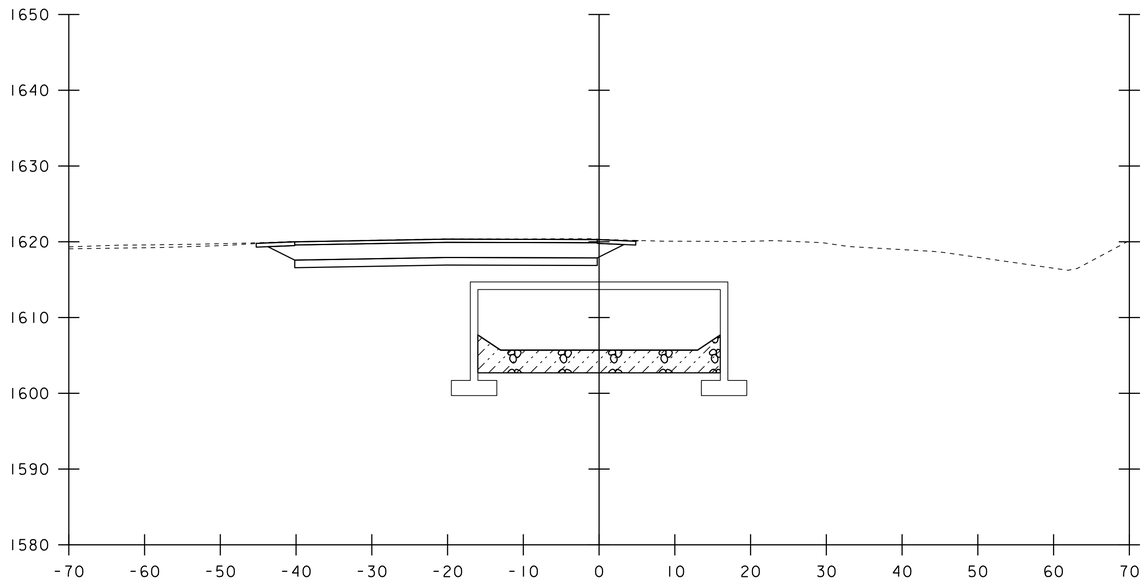


21+90

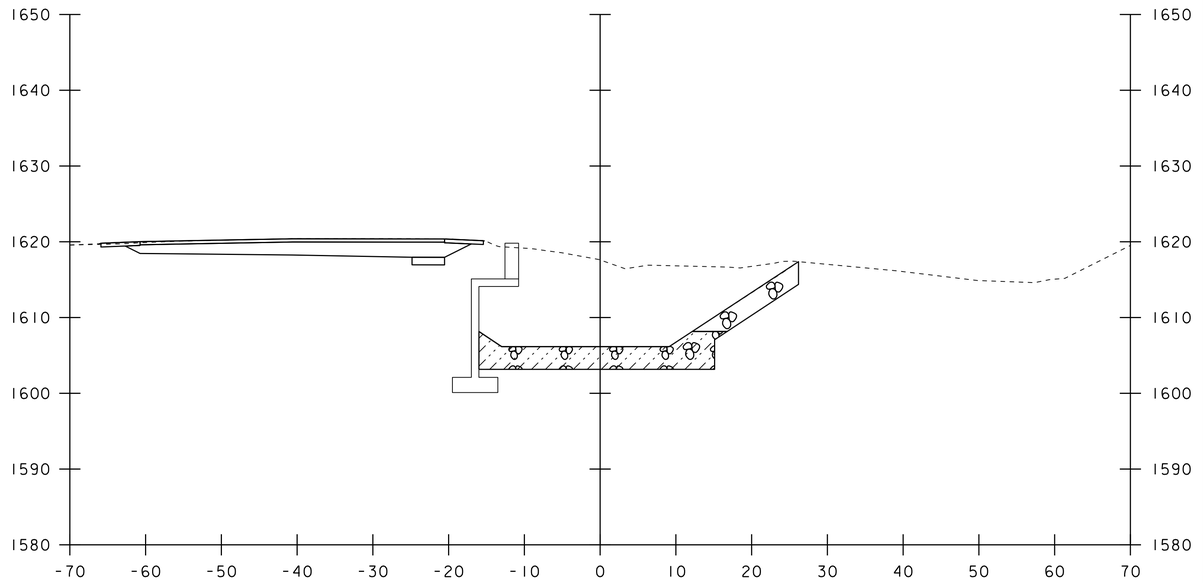
STA. 21+70 TO STA. 22+00

PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)

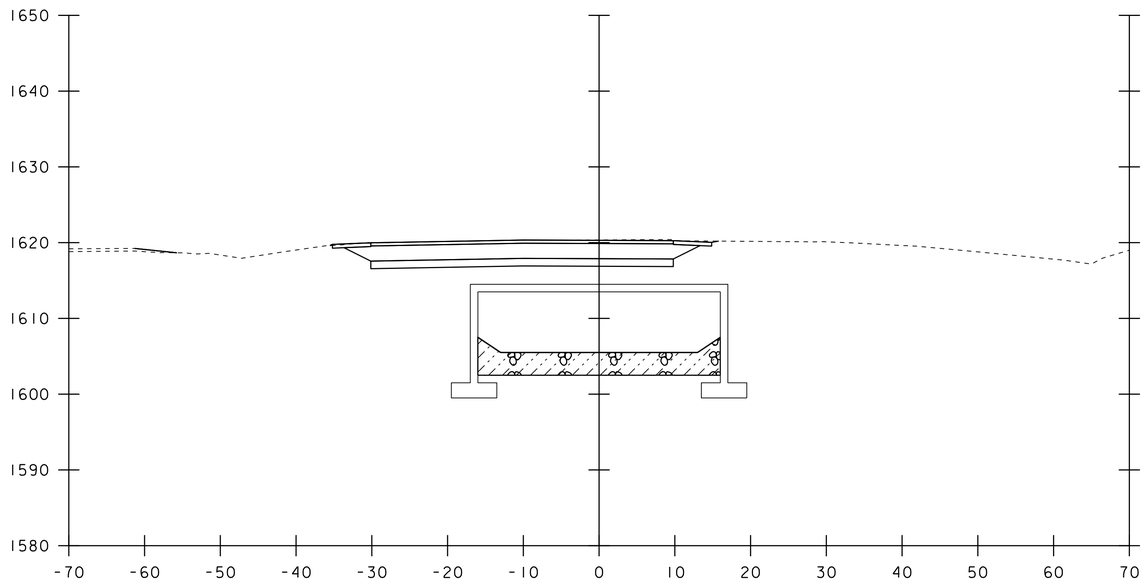
FILE NAME: sl2c594xs.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: C.COTE
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
CHANNEL SECTIONS SHEET 3	SHEET 22 OF 25



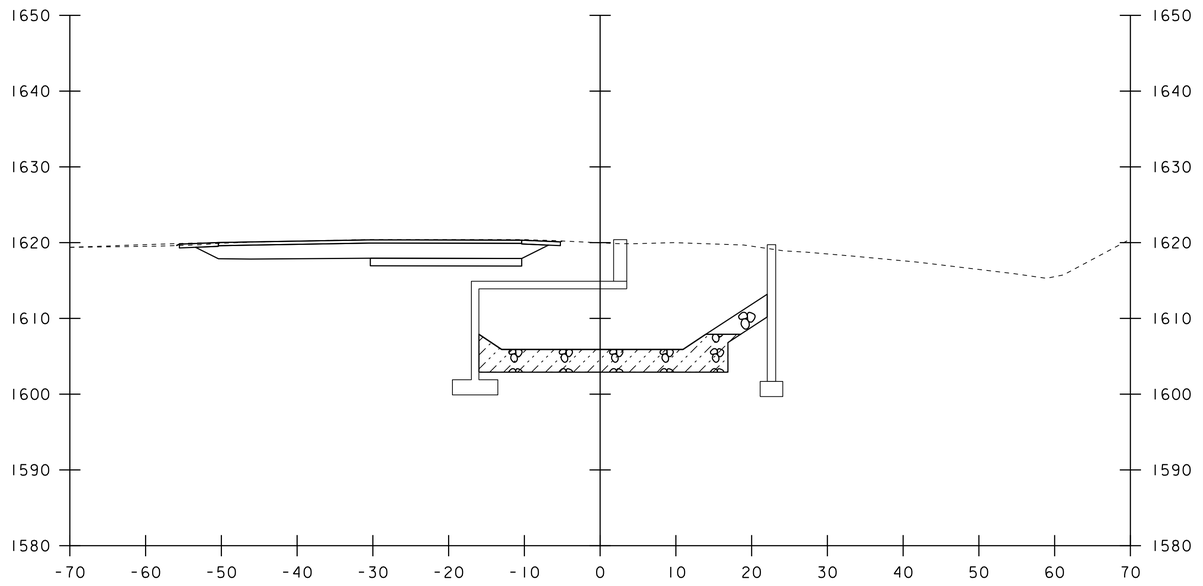
22+20



22+40



22+10

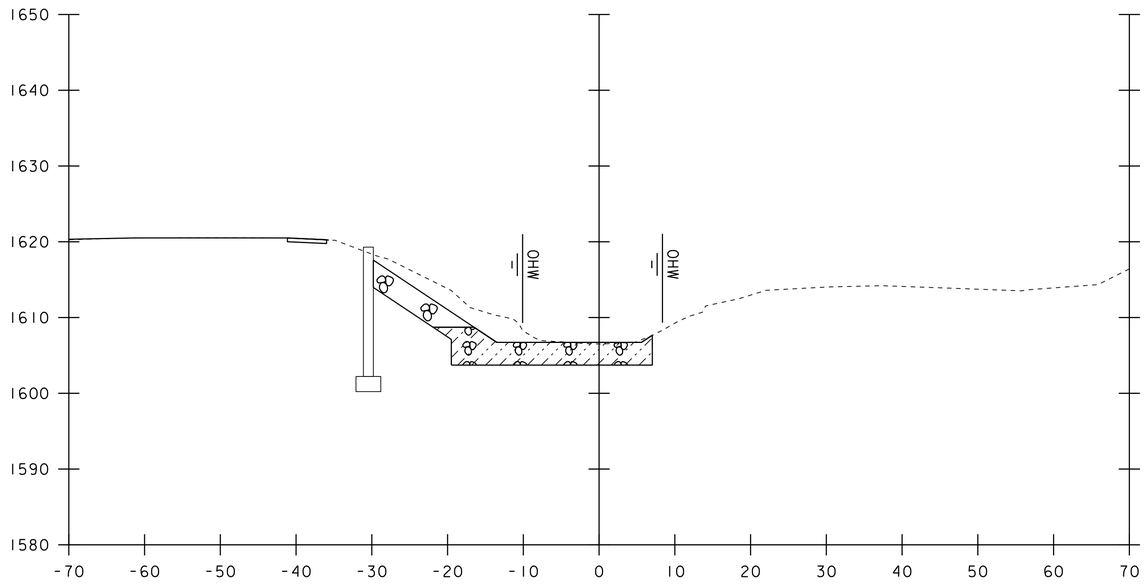


22+30

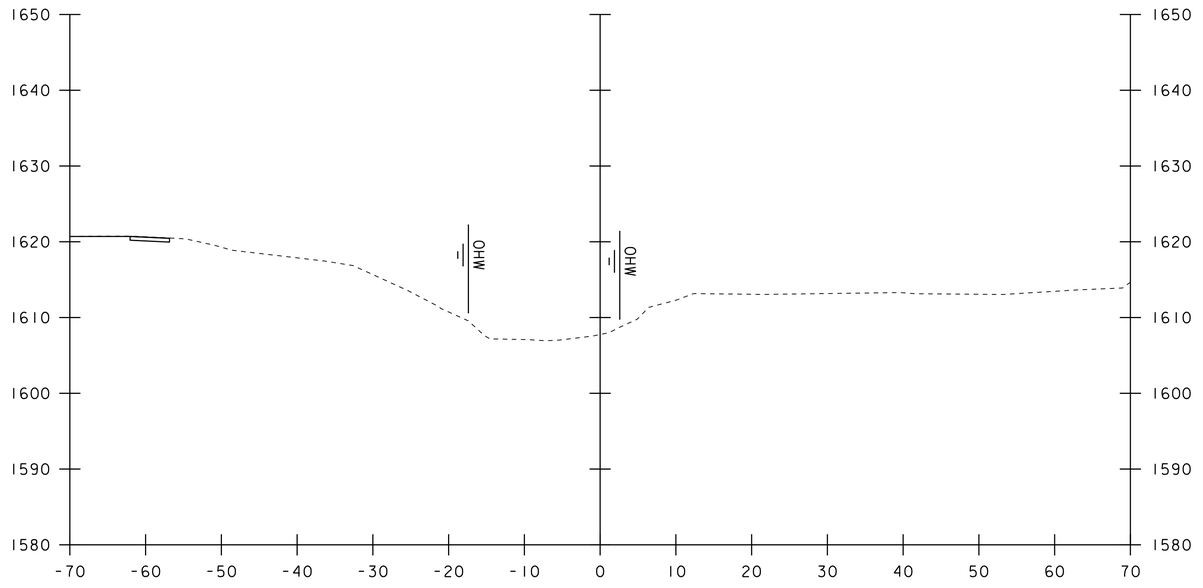
STA. 22+10 TO STA. 22+40

PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)

FILE NAME: sl2c594xs.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: C.COTE
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
CHANNEL SECTIONS SHEET 4	SHEET 23 OF 25



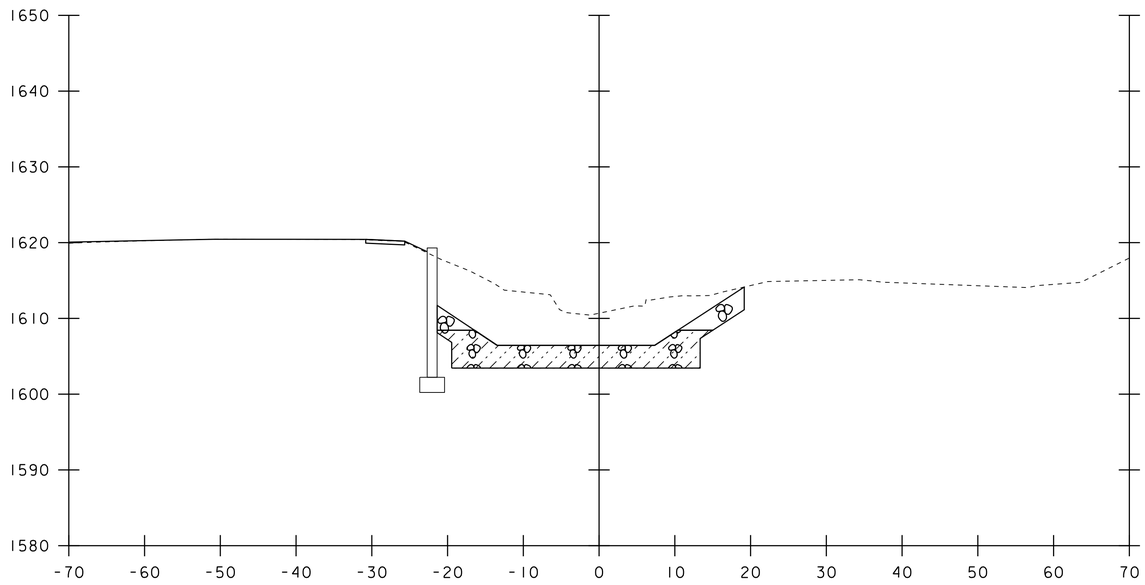
22+60



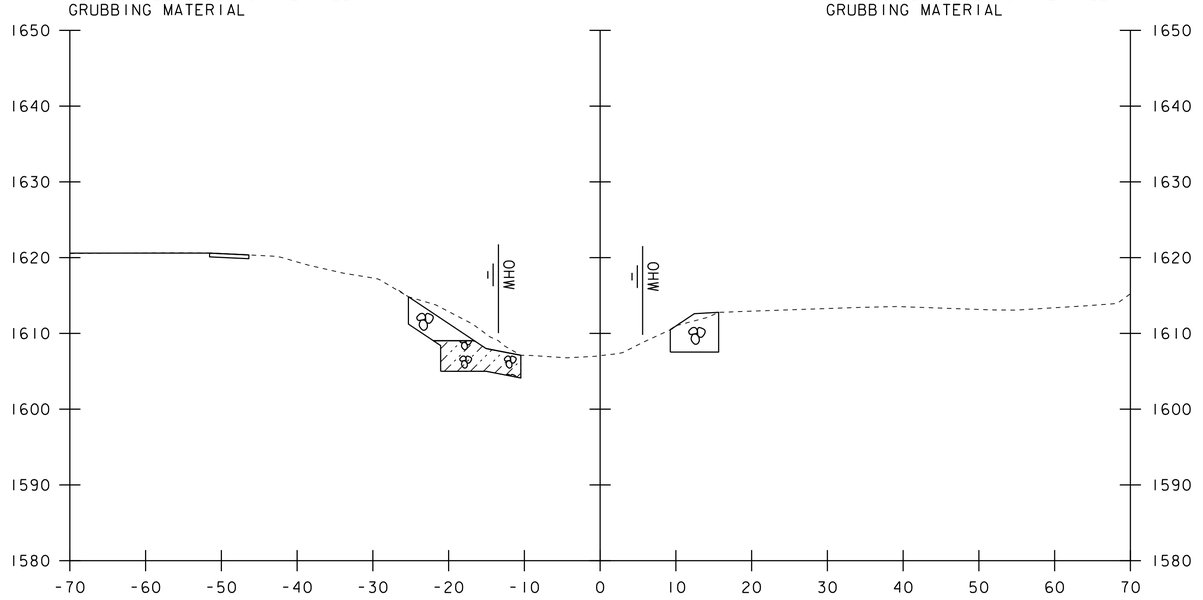
END 22+78 LT
UNCLASSIFIED CHANNEL EXCAVATION
STONE FILL TYPE III
E-STONE FILL TYPE III
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL

22+80

END 21+78 RT
UNCLASSIFIED CHANNEL EXCAVATION
STONE FILL TYPE III
E-STONE FILL TYPE III
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



22+50



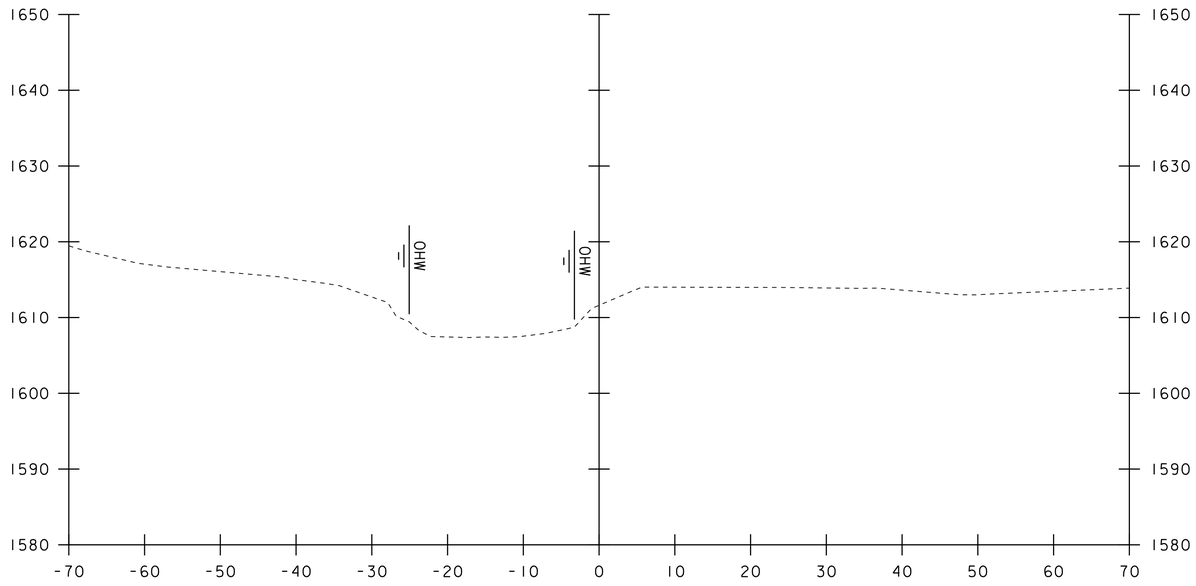
22+70

STA. 22+50 TO STA. 22+80

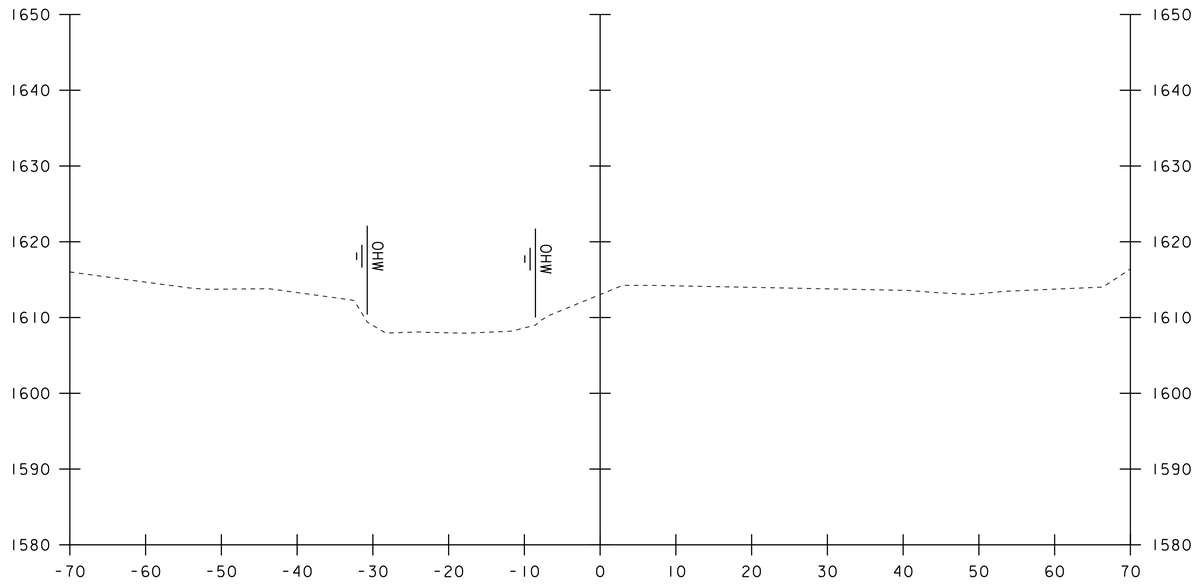
PROJECT NAME: MT. HOLLY
PROJECT NUMBER: BF 0133(12)

FILE NAME: sl2c594xs.dgn
PROJECT LEADER: R.YOUNG
DESIGNED BY: C.COTE
CHANNEL SECTIONS SHEET 5

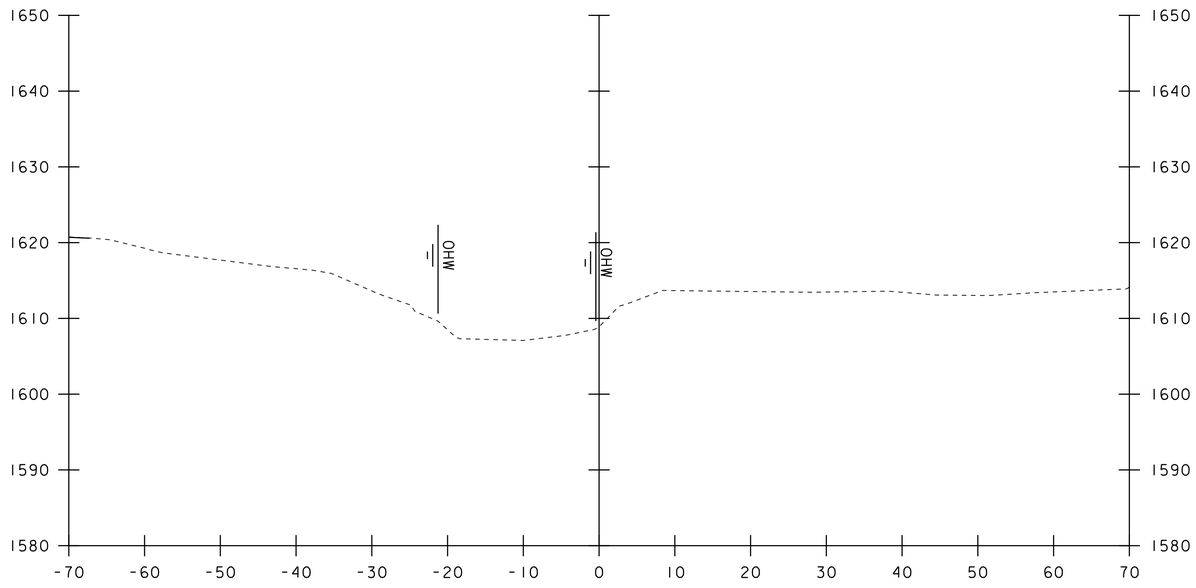
PLOT DATE: 09-NOV-2018
DRAWN BY: C.COTE
CHECKED BY: C.MOONEY
SHEET 24 OF 25



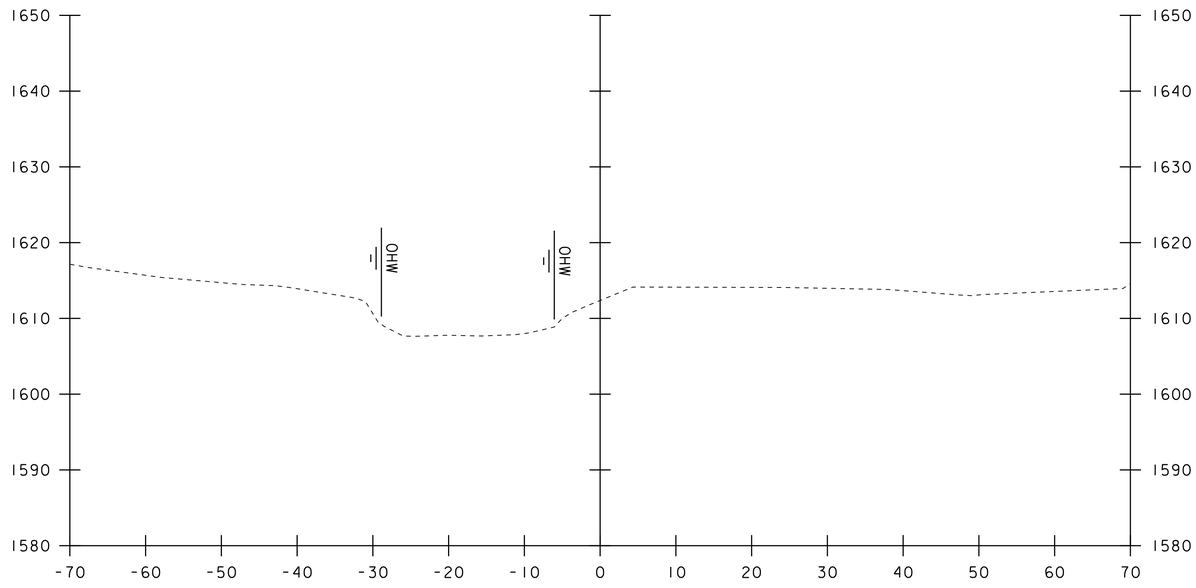
23+00



23+20



22+90



23+10

STA. 22+90 TO STA. 23+20

PROJECT NAME:	MT. HOLLY
PROJECT NUMBER:	BF 0133(12)
FILE NAME: sl2c594xs.dgn	PLOT DATE: 09-NOV-2018
PROJECT LEADER: R.YOUNG	DRAWN BY: C.COTE
DESIGNED BY: C.COTE	CHECKED BY: C.MOONEY
CHANNEL SECTIONS SHEET 6	SHEET 25 OF 25